

MOTOR AGE

JAMAICA DISASTER AND THE MOTOR CAR



CLEANING KINGSTON, AFTER EARTHQUAKE

A LAND where every road is a good road, where the motorist is respected by everyone, where all the sights are new and interesting and, finally, a land where there is a motor vehicle law without specific speed limitations—such is the island of Jamaica. A country long favored by the general tourist, Jamaica has not received the patronage from the motor tourist which it deserves.

Perhaps its advantages as a touring ground would have remained longer unnoticed had not the great earthquake of last month centered the attention of the world upon this island and brought to its shores a number of Americans, among whom were several motorists. These visitors, summoned there as a result of the catastrophe, naturally availed themselves of the motor car as a means of transport and on their return to this country they have put the information which they gleaned at the disposal of their fellow motorists.

It was a melancholy errand on which Dr. W. F. Bacon, of York, Pa., and his party started for Jamaica on the first boat which left New York after the great Kingston earthquake. Dr. Bacon was commissioned to find the body of one of his patients whom the first dispatches had reported as having been killed in the catastrophe. When the party reached Port Antonio, on the north shore of Jamaica,

the first point at which the steamers make a landing, he received the cheering information that his patient was unharmed and had started back for the states. But a doctor who went to Jamaica at that time and who did not stay and contribute his services would have indeed been false to the ethics of his profession. The authorities at Port Antonio impressed on Dr. Bacon that his services were needed. "The

situation at Kingston is well under the control of the medical corps," he was informed, "but we have been unable as yet to send any doctors into the interior of the country and we do not know how many there may be who need medical aid." "All right," replied Dr. Bacon, "get me a motor car and I will go wherever I can do the most good." As soon as the situation became known, Victor Camp, a young American residing in Port Antonio, who owns a White steamer, volunteered to put his car at the disposal of Dr. Bacon's party and further offered his own services as driver. The doctor did not hesitate in accepting the offer and preparations for the trip were immediately made.

Within 2 hours after the steamship had disembarked its passengers at Port Antonio Mr. Camp, Dr. Bacon and his party were on their way across the island to Kingston. The first 30 miles lay westerly along the seashore. Along this stretch of road no variation from normal conditions was evident. Then at Annotta bay the course was laid due south over the ridge of mountains which, stretching from east to west, forms the backbone of the island. None of the officials had been over this road from Kingston since the earthquake, and the negroes had circulated alarming reports of landslides in the interior, causing great loss of life. The fact that the telephone and telegraph communications



ONE OF THE COOLIE WOMEN



STAFF OF THE GOVERNMENT HOSPITAL AT KINGSTON



TYPICAL COUNTRY ROAD WITH SEA IN DISTANCE

were interrupted lent some color to these reports, but when Dr. Bacon's party reached the mountain districts it found that the situation had been greatly exaggerated. There had been minor landslides, where sections of mountains overhanging the narrow roads had toppled over and blocked the roads, but these accidents had caused no loss of life. The negroes had proceeded to clear away the obstructions, so there was no section of the road which Mr. Camp's car was not able to negotiate.

By some marvelous means the news that a doctor was coming seemed almost to precede the motor car. At frequent intervals the car would be hailed and some person needing medical aid would be carried down to the roadside to receive the doctor's care. People with all kinds of ailments besought treatment and it finally became necessary to refuse many of them, as the members of the party were determined not to spend the night in the mountains. They finally sought shelter at the Constant Springs hotel, 6 miles inland, and the next morning reported to the government hospital at Kingston. Never was the arrival of aid more welcome. Since the earthquake the small staff of physicians had had but little rest and the novel experience of making their rounds of the refugee camps in the swift and silent motor car seemed to refresh them as much as would hours of sleep. Furthermore, to the overworked Red Cross nurses a spin around the city in the car was a joy ride in the literal sense of the term. It is a conservative statement that in a single day Mr. Camp's White car accomplished more, in taking supplies to the various camps, in carrying the sick and wounded to the hospitals and in giving the authorities an opportunity to reconnoiter, than had been accomplished in the preceding week with the means of transport which had been available. For several days Dr. Bacon and his party worked like Trojans in and about the city of Kingston, in relieving the situation.

On the second day they were confronted with a serious problem—namely, how to

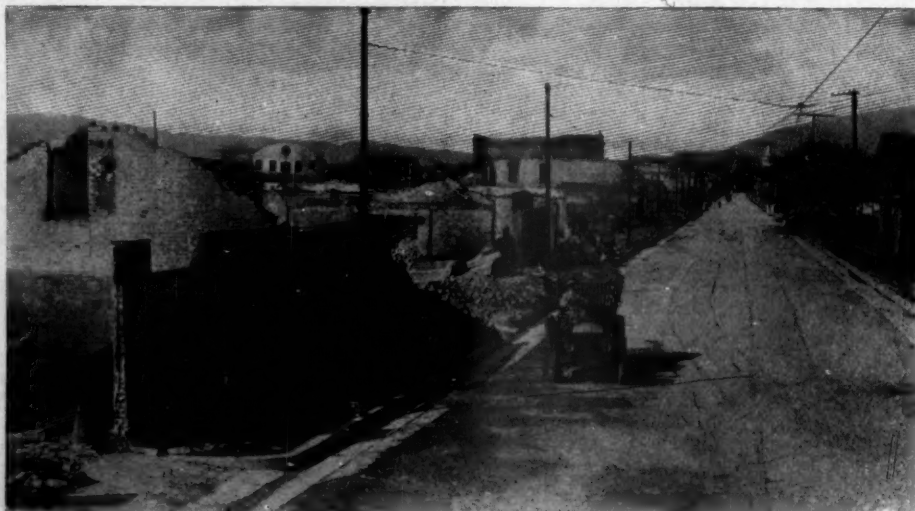
obtain gasoline. The stores where this commodity could ordinarily be obtained were destroyed and even the oil company did not have a gallon. A tank steamer was expected from the states in 3 or 4 days but such an interval of enforced rest could not be considered by the tourists. Finally one of the government surgeons learned that a certain baker had a small supply. When approached he declared that he did not have a license to sell it, and therefore could not accommodate them. But he was finally induced to lend a few gallons for the use of Mr. Camp's machine on the deposit of \$1.10 per gallon to insure its return. Needless to say this price, as well as the difficulty in obtaining gasoline, are not normal, but were the result of earthquake conditions. Mr. Camp's supply of carbide also became exhausted. But this resulted in no inconvenience, because the tropical moon is of a brilliancy unknown in our northern latitudes and acetylene headlights are entirely superfluous out in the country.

The Swettenham incident should not be taken as typical of the attitude of the authorities of Jamaica toward outside aid. On the contrary, the medical authorities of Kingston could not find words to suffi-

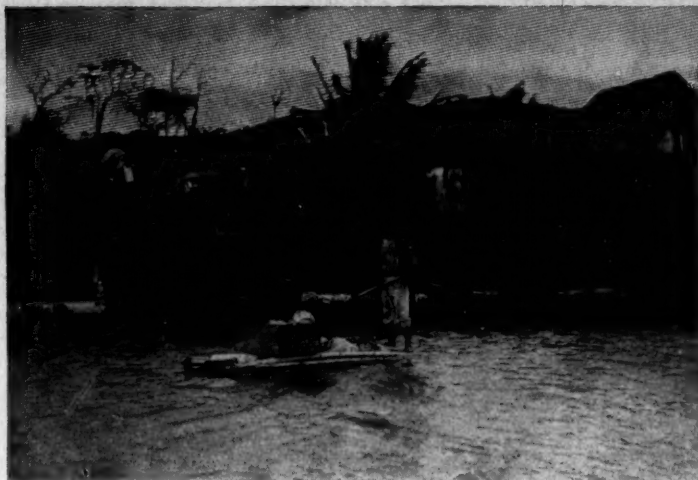
ciently express their thanks to Dr. Bacon and his party, and the doctor brought back with him an official communication from the chief officer of his majesty's hospital corps, expressing the government's appreciation for the service rendered.

After Dr. Bacon and his party had done all that presented itself to do they devoted a few days to touring the island and to studying meanwhile its geography, history, social and economic conditions and other phases of life in Jamaica of interest to the tourist.

Jamaica lies due south of the eastern portion of Cuba and is but 18 degrees north of the equator. It is, therefore, thoroughly tropical in every respect. The length of the island is 144 miles and its width varies from 20 to 50 miles. The total population is about 600,000, unusually well distributed. Practically all parts of the island are settled and under cultivation. There are less than 200 miles of railroad on the island, with the result that the principal means of communication are the highways. The government has been very active in road building and the island is covered with a network of fine stone roads which reach almost every locality. The material used for the roadbed is a white



HARBOR STREET, KINGSTON, SHOWING HAVOC BROUGHT BY EARTHQUAKE



MOVING DAY IN JAMAICA

stone which is soft and crushed readily. It is a better material than macadam for the reason that it is porous and the heavy tropical rainfall disappears from the surface almost instantaneously. A muddy road is unknown in Jamaica. This stone occurs in all parts of the island and both road building and road repairing are simple matters. As might be imagined these roads are very easy on tires. Mr. Camp's White steamer has run 10,000 miles on one set of tires and he expected them to last for several thousand miles more. It is evident, therefore, that Jamaica, that far-off place which we, with characteristic Yankee self-satisfaction, generally think of as a semi-civilized community, is infinitely in advance of us in the good roads movement. The prevalence of good roads suggests good government and good administration generally, and such indeed is the case.

Jamaica was discovered by Columbus in 1494, and remained under Spanish rule until 1638, when it fell into the possession of England. It has been an English colony ever since, administered by a governor named by the crown. The English law, language and customs prevail. Administration of justice is swift and sure, and there is a wholesome respect for the law

throughout the island. Native police patrol all parts of the island. An examination of the court records reveals that almost the only offenses with which they are called upon to deal are petty larceny cases. Thus tourists may travel with impunity unarmed in any part of the island.

As regards the people of Jamaica, an overwhelming preponderance of the population are negroes. When Columbus landed the island was inhabited by a race of aborigines closely resembling those of Central America. Under the cruelties and persecutions of the Spanish regime the original inhabitants declined in number. Then began the importation of slaves from Africa, continuing for a couple of centuries, so that the negroes are now the real natives of Jamaica. No trace of the original race remains.

The tourist will be surprised at seeing another entirely different type of blacks—namely, coolies imported from India. There are a considerable number of these East Indians scattered throughout the island. They still worship Buddha and otherwise maintain their native customs and beliefs. One of the tenets of their religion is that they shall not be photographed and the sight of a camera suf-



JAMAICA CLUB HEADQUARTERS IN KINGSTON

fices to send them scurrying into the timbers. The accompanying photograph of one of the coolie women with her child was obtained by one of Dr. Bacon's party only after a considerable exercise of strategy on the photographer's part.

The government officials, the managers of the larger plantations and many of the business men are English, and their influence is predominant. Americans own the railroads and most of the large plantations. The principal hotel on the island also is owned by Americans; each winter more Americans go to the island, so it may be said that the American influence is gradually becoming stronger.

The tourist, accustomed only to the roads of the United States, will find a week spent in touring Jamaica an experience he will never forget. The roads lead past groves of banana trees or through sugar, orange or coffee plantations, all of which are decidedly novel to the visitor from the north. In the mountains will be seen countless varieties of strange tropical plants, including rare species of insectivori. Strange forms of insects and birds of brilliant plumage are other new things which will interest the stranger. The negroes live in bamboo huts in the midst of the groves. There is no indication of race suicide in Jamaica. The approach of a motor car brings a swarm of children out of every hut. So large are the families and so small are the huts that one wonders how the place can accommodate them all. One might suppose that part of the family stayed out doors all nights, but inquiry reveals that no one sleeps out doors in Jamaica, as there is a belief that sleeping out doors brings on the fever.

In Jamaica there are no such vast uninhabited tracts as can be found, for example, in northern Maine, although there are practically no towns in the interior. Every few rods along the road will be seen a native hut and, where the foliage is not too thick, several huts are generally in sight. The motorist need have no fear of finding himself alone in the bush. There is no locality where a toot of the horn will



REFUGEE CAMP IN PUBLIC PARK AT KINGSTON



DR. BACON RECEIVING INSTRUCTIONS FROM INSPECTOR

not bring to his car several score of people whose attitude is one of extreme respect. There are no white people whatsoever inland, but the negroes are an honest folk most willing to make themselves useful and, incidentally, earn a sixpence or two if opportunity offers.

And as for food supplies, all one needs to do is to pick his favorite fruit from the trees. There are few cows in Jamaica and the tourist must accustom himself to goats' milk. The Jamaican goat is an interesting proposition. It is built especially for hill-climbing, having very short front legs and very long hind ones. As to how he gets down hill Dr. Bacon and his party were unable to say, as the approach of the steamer always was the signal for the goats to scamper up the hillside. None of them was seen going down.

There are practically no horses in Jamaica. The donkey is the beast of burden. The prevailing style of wagon is a two-wheel affair which, from the motorist's point of view, is far preferable to the four-wheel type common in this country. As might be supposed, the donkeys have not yet become entirely accustomed to the motor car, and as soon as they see one coming they wheel around abruptly and start at full speed in the opposite direction. This maneuver can be effected with entire safety to the wagon and its contents with a two-wheel chassis, unlike the four-wheel vehicle with its well-known tendency to tip over and spill out its contents when it is suddenly turned around. It is only the more prosperous natives, however, who own donkeys. The majority of them carry their crops to market on their heads—that is, the women folk carry them. Their skill in going up and down hill with a towering burden on their heads without any apparent effort to keep it in balance is something decidedly remarkable.

The climate of Jamaica is most salubri-

ous and the island undoubtedly is destined to become a great health resort. Only a few simple precautions are necessary to accommodate the system to the climatic conditions. The air is warm and balmy, never stifling. In the morning there is a fine fresh wind from the ocean which the negroes call "the doctor," because they believe it braces them up. Late in the afternoon comes a damp wind from the mountains which they believe to have the opposite effect and which they call "the undertaker." Probably the healthfulness of Jamaica as compared with other tropical countries is due to the fact that there are practically no swamps and the greater part of the area of the island is well elevated above sea level. The best time for the Americans to visit the island is from December to March inclusive.

As regards the hotels, the Hotel Titch-

field at Port Antonio is a fine modern structure, standing on a high bluff overlooking the ocean. This hotel compares favorably with any of those at the summer resorts of this country. The Myrtle Bank hotel at Kingston was destroyed by the earthquake, as also was part of the Constant Springs hotel, already alluded to. It should be noted, however, that no serious damage was done by the earthquake except in the immediate vicinity of Kingston. The hotels at Spanish Bay and other coast towns, which may be classed as fair to medium, are doing business as usual.

The island of Jamaica may be reached by any one of three steamship lines. The Hamburg-American line maintains a weekly service from New York and the Royal Mail Steam Packet Co. runs boats from the same port every other week. On both of these lines the trip may be made with fully as much comfort as on the trans-Atlantic liners of a few years ago. The United Fruit Co., the principal factor in the industrial affairs of Jamaica, runs boats at various intervals from New York, from Boston and from Philadelphia. Port Antonio is about 1,440 miles from New York and the voyage is made in 4 or 5 days. Leaving New York in the dead of winter, the traveler, within 24 hours, is in the midst of the Gulf Stream and is enjoying the delightfully warm and balmy atmosphere. The steamers pass between Cuba and Haiti, and both these islands may be seen at the same time. On arriving at Jamaica, the custom house formalities take only about 10 seconds for each traveler. His luggage is not inspected; it is simply chalked O. K. This is in striking contrast with the rigorous and rather unpleasant procedure which he must undergo on returning to his native land.

Jamaica wants the motor tourist and, wanting him, is ready to cater to his needs. At the present time there are only



TYPICAL NATIVE HUT AND A MODERN MOTOR CAR



MYRTLE BANK HOTEL IN CITY OF KINGSTON

five touring cars owned on the island, three of them being White steamers and the other two machines of English make. A few of the winter tourists have brought their cars to the island with them, but not nearly as many as if the advantages of the island were better known. Americans are too apt to think of Jamaica as a far-off island somewhere in the Atlantic where there are nothing but "niggers, rum and revolution." There is none of the latter, and while there are plenty of the former, the English officials on the island could give pointers to American legislators in more than one respect. For example, there is not a state in this country which could not, with advantage to all concerned enact a motor vehicle law similar to that of the island of Jamaica. Judge Hotchkiss, in his inaugural address as president of the A. A. A., held forth as an ideal which might be realized some time in the dim and distant future, the enactment of a law which would not limit motor cars to a certain number of miles per hour, but rather would declare that the speed should be reasonable at all times. In Jamaica today there is in force just such a law and so thoroughly does it seem to cover the rights of all users of the highway that its provisions are given below, with the hope that a similar statute may at some time be enacted in our own country. They are as follows:

1—No person shall drive a motor car on a public highway recklessly or negligently, or at a speed or in a manner which is dangerous to the public.

2—Every motor car must bear marks of identification.

3—The driver of a motor car who commits offense against the law is obliged to stop and give his correct name and address.

4—Every motor car shall be registered with the collector of taxes.

5—No person may forge or fraudulently alter, use or lend, or allow to be used by any other person, any mark of identifying a motor car, or any license under the law.

6—In case of any accident being caused by a motor car, the driver shall stop and give

his name and address, also registration mark and number of car, and the name and address of the owner.

7—During the period between one-half hour after sunset and one-half hour before sunrise, lighted lamps must be in place on all motor cars.

8—Every motor car must be provided with a horn or other instrument for giving warning.

9—A fee of 10 shillings shall be charged by the collector of taxes on the registration of a motor car.

10—A person shall not drive a motor car on a public highway unless he is licensed, nor employ any unlicensed person to drive a motor car.

11—Any offense against the motor car law of Jamaica is punishable by fine or imprisonment.

Jamaica may have its Swettenham, but it has not yet produced a Frelinghuysen.

Just one more instance in which the United States government suffers by comparison with the government of the island of Jamaica. The consular authorities have within the last 2 months issued a guide

book of the roads on the island, modeled after the book issued by the White Co. for the use of last year's A. A. A. tourists. The man who takes a motor car to Jamaica can be assured that he will not have the same difficulty in finding his way around the island as he would in touring in his own state. Then again, consider the contrast between the dry and prosaic government document in this country and the friendly advice contained in a handbook issued by the government of Jamaica for the use of motoring tourists. Typical paragraphs read as follows:

"Tourists desiring gasoline may have the quantity desired delivered at any railroad station on application to the director of the railway, Kingston, and on pre-payment of all charges. The supply of gasoline, however, cannot be guaranteed, and at least 24 hours' notice will be required. If not removed within a week, the gasoline will be returned to store."

A country which has so many miles of perfect stone roads, which has no speed limitations, which has detailed guide books issued by the government, and which has all the attractions of a tropical country certainly merits the patronage of American tourists. If they do not take advantage of the opportunity it is no fault of Jamaica's, for it certainly offers all the attractions any motorist with plenty of time on his hands and an inclination to travel can ask. Dr. Bacon's unexpected expedition on the island should be an eye-opener to those in search of new worlds to conquer. Another benefit which may result from the expedition is that the motor laws which the island boasts may be instrumental in calling attention of the legislatures of the United States to a model set of laws—something which they might copy with benefit to themselves and the people of the country who are seeking an equitable adjustment of the laws.



BEAUTIFUL COAST ROAD BETWEEN PORT ANTONIO AND ANNATI BAY

DETROIT MOTOR CAR SHOW PURELY DETROIT

**Light Guard Armory
Splendidly Decorated,
Good Crowds, Long
List of Exhibitors and
Everybody Pleased**



LIGHT GUARD ARMORY, WHERE DETROIT SHOW IS BEING HELD

DETROIT, Mich., Feb. 12—Slightly mellowed by the obvious possession of more than the usual amount of winter good cheer, but deliberately courteous withal, a well-dressed man of middle age grasped the railing of one of the booths in the gallery of the Light Guard armory and took a long look at the sign at the rear upon which were emblazoned the accessory on exhibition, along with the address of the manufacturing company, located at Philadelphia, Pa. Carefully the itinerant let go the railing with one hand and pointed a reproving index finger at the nearest salesman. "Put him out," he commanded in a serious tone.

The astonished young man within the booth managed to ask an explanation. "Sir," was the reply, "this is the Detroit motor car show. I have been round it from the bottom up and you are the first man I've seen who had the nerve to come here and exhibit an article not made in Detroit. You are in the wrong pew. I've warned you. Leave before it is too late or they'll find you out."

Well, the mellow party may have overlooked a sign or two elsewhere for which he was certainly excusable, but his lapses were not many. The Detroit show now on, while nominally in the interests of the manufacturers and dealers, was indirectly the most surprising in its exhibit of Detroit-made motor cars and fittings. It appealed to local pride as few exhibitions of a similar character have ever been able to do. It was a testimonial to the tremendous growth of an industry of the last decade which now employs more men than

any other line of manufacturing in the metropolis of Michigan. And further, the crowds which are in attendance are another evidence of the same condition.

A member of the trade who had attended all the former shows in the national circuit, including the big affairs at New York and Chicago, pronounces the Detroit crowd by all odds the most intelligent from a technical standpoint, in attendance at any of the exhibitions. Accordingly, when one pauses to ponder the situation, the surprise which he feels when he hears two prettily-gowned women in an earnest discussion of the four vs. six-cylinder question, is less in evidence.

The Detroit retail firms which hold forth on the main floor and in the basement, are handling Detroit-made cars in a tremendous majority. The accessory concerns which throng the gallery with their scores of specialties, were, with a very few exceptions, Detroit firms. It is a

Detroit show with a vengeance and the local character of the exhibits is just as marked as the local character of the crowds in attendance.

The sixth annual show of the Tri-State Automobile and Sporting Goods association opened on scheduled time, Monday evening at 8 o'clock, with every exhibit in place and the general appearance of a function which has been in progress for a week. Not a stroke of the hammer was heard through the hall and the ubiquitous step-ladder, so prominent in former opening nights, was conspicuous by its absence. The armory is hardly big enough for the show, which long since outgrew the main floor and gallery, but it is the biggest hall in the city and perfect organization, born in 5 years of experience, makes it serve its purpose. The aisles are narrow but plentiful and the opening night's crowd of 3,000 persons was able to navigate and keep moving, though it did jam the hall to such a degree as to make independent motion a matter of extreme difficulty.

The management of the Detroit show this year installed an innovation in shape of a prohibition against the old-style covered booth which has formed so prominent a part in the floor schemes of past years. This year the exhibitors were notified to cut them out. As a result the show presents a much improved appearance. The various exhibits are separated by low railings, swathed in the show colors of maize and blue, to correspond with the decorations in the rafters and round the galleries. Of course, the electric signs could not be spared and these, blazing out their message, pendant from the steel rafters, are present in great profusion.

Secretary Seneca G. Lewis is authority for the statement that a round million dollars' worth of motor cars and equipment were housed in the armory when the exhibition opened. The management showed its appreciation of the exhibitors by its scheme of fire protection. Scattered all about the hall are uniformed members of the Detroit fire department, on leave for the occasion. Each one stands near a hand apparatus for extinguishing any incipient blaze. No gasoline is allowed inside the hall and every possible precaution is taken for the safety of the exhibits.

To the Detroiters who have watched the progress of the motor car manufacturing business, the feature of the 1907 show is the presence of so many new local manufacturers. Among the brand new "nineteensevens" are the Brush Runabout Co., the Blomstrom Mfg. Co., the Marvel Motor Car Co. and one or two others which manufacture complete cars. Then there are equipment concerns without number which are making their bow to their home crowd.

Beyond question, a car which attracts great attention is the Brush runabout,



DETROIT SHOW POSTER

which is shown here for the first time, its manufacture being unavoidably delayed to such an extent that it was impossible to secure its presence at either New York or Chicago. The Brush runabout is designed by A. P. Brush, the designer of the Maxwell. Its purpose, as explained by Dwight Huss, of transcontinental fame, is to retire from active service every horse and buggy rig used for the transportation of one or two persons who make city travel a portion of their daily work. To this end the designer was instructed to strive for simplicity, economy and durability. The Brush runabout is propelled by a single-cylinder engine, installed vertically under a bonnet in front. A novel method of suspension is employed which the inventor believes is so well adapted to the uses of a light car, as to permit of the elimination of pneumatic tires, solid rubber being substituted and immunity from puncture consequently secured. Economy of fuel and lubricating oil is guaranteed and a life of 10 years with intelligent usage is predicted for the little car. The model on exhibition at the armory is attached to an electric motor and a demonstrator is

constantly in the seat, shifting the gears and showing the methods of control. There is but one hand lever connected with the mechanism of the car, this being the reverse. The Brush runabout beat the others to the first sales. Two orders were announced before the show had been open a half hour and a dozen more trailed along during the progress of the opening night. The Brush factory is now in lively operation and deliveries are promised in April. The first year's output will be 2,500 cars, though this will be greatly increased next

season. The firm has ample financial backing and is engaging a crack staff of department heads.

Considerable interest attached itself to the appearance of the Blomstrom Thirty. Mr. Blomstrom, who has been for some time one of the best known gas engine experts in Detroit, being a pioneer in the old field of marine engine work, is no longer actively connected with the C. H. Blomstrom Motor Co., but announces the formation of a new concern—the Blomstrom Mfg. Co.—with the following organization: President, C. H. Blomstrom; vice-president, John S. Irvine; secretary, O. M. Springer; treasurer, Hugh

J. Wood. The factory is located on Lieb and Wight streets and fifteen cars are now being rushed through for sample purposes.

The largest display of the show is made by the Cadillac Motor Car Co., which keeps up its record, established at the very first show, in this respect. William Metzger and the car which is linked with his name have long held a prominent place in local as well as national motoring. The concern still maintains the local branch which it established in the early days and the Cadillac displays have kept pace with

EXHIBITORS AT THE DETROIT SHOW

MAIN FLOOR EXHIBITORS

Cadillac Motor Car Co.
Seidler-Miner Automobile Co.
Northern Mfg. Co.
Reliance Motor Car Co.
Marvel Motor Car Co.
J. H. Brady Automobile Co.
Maxwell-Briscoe-McLeod Co.
J. P. Schneider
White Co.
Aerocar Co.
Welch Motor Car Co.
Fee-Bock Automobile Co.
Grant Brothers
Wayne Automobile Co.
Standard Automobile Co.
Detroit Automobile Co.

BASEMENT EXHIBITORS

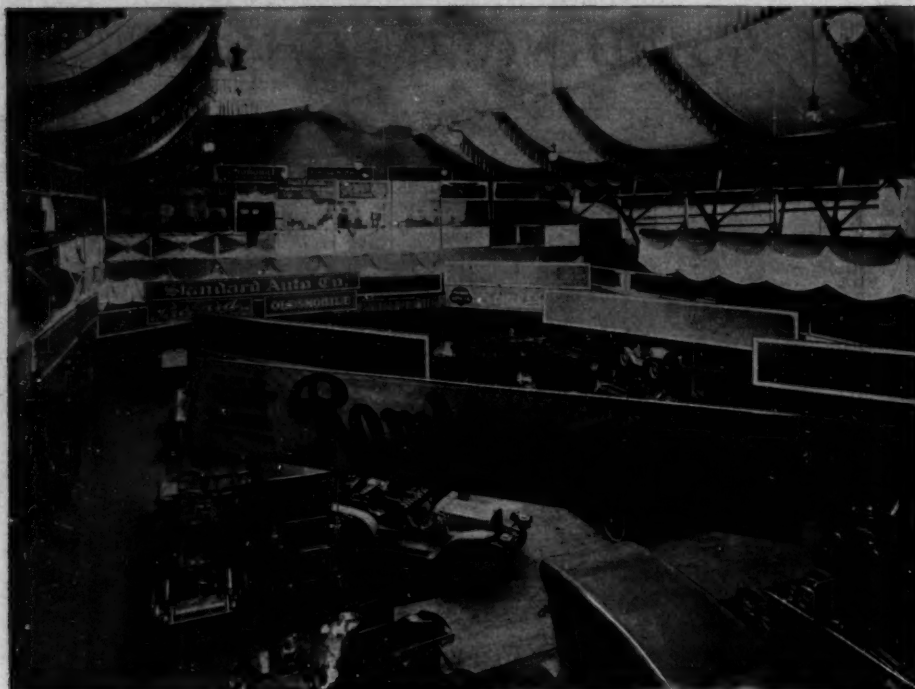
Merkel Motor Co.
Detroit Gas Engine Co.
Modern Pattern Co.
William Metzger
C. H. Blomstrom Co.
J. B. Trossell
Brush Runabout Co.
William Newman Automobile Co.
Analel Pneumatic Spring Co.
Schug Electric Co.
Scripps Motor Co.
Eclipse Mfg. Co.
Detroit Auto Vehicle Co.
Pungs-Finch Automobile Co.

GALLERY EXHIBITORS

Swinehart Clincher Tire & Rubber Co.
Automobile Appliance Co.
Jones Speedometer Co.
Wetherbee Battery Co.
Hydraulic Storage Co.
Charles E. Miller
Auto Equipment Co.
Pennsylvania Rubber Co.
American Lamp Co.
Oliver Instrument Co.
C. F. Splittdorf
Detroit Motor Car Supply Co.
Monier Auto & Cycle Supply Co.
Ideal Tire Co.
Michigan Storage Battery Co.
Rands Mfg. Co.
Edward S. George
William Cramp & Sons Co.
Briscoe Mfg. Co.
Auto Accessories Mfg. Co.
Hartford Suspension Co.
Joseph Dixon Crucible Co.
Stewart & Clark
Brockstanz Brothers
National Coil Co.
Warner Inst. Co.
Acetylene Co.
Michellin Tire Co.
Travelers' Insurance Co.
Electric Storage Battery Co.
Kane Starting Device Co.



GENERAL VIEW OF THE 1907 DETROIT MOTOR CAR SHOW, SHOWING GENERAL ARRANGEMENT AND DECORATIVE SCHEME



DETROIT SHOW FROM THE GALLERY, SHOWING SOME OF THE BIG EXHIBITS

the times. All the models are exhibited, the feature of greatest interest being one of the four-cylinder models, the engine of which, for purposes of demonstration, has been partially cut away and attached to an electric motor, showing the interested crowds the manner of its workings. The interior of the bonnet is illuminated with diminutive incandescent globes and the engine as it revolves is always surrounded by a thick fringe of people.

Sharing with Mr. Metzger in a trade history that runs back to the earliest days of motoring is John P. Schneider, whose establishment, in conjunction with Mr. Metzger's old stand, founded what is now Detroit's row on Jefferson avenue. The Franklin, Pierce Great Arrow, Pope-Toledo and Stevens-Duryea comprise his most attractive line and there is plenty of space for them all. The Baby Reo furnishes a magnet that drew many people to the booth of the Lansing people's local distributor. The Maxwell-Briscoe-McLeod Co. has a fine display opposite the main entrance. The Reliance people show the famous Detroit-Chicago commercial car. The big Welch touring car, fresh from its victories on the Florida beach races, is in evidence. The White, though the only steam car in the building, is as popular a booth as there is in the show. The Detroit Automobile Co., one of the most prominent of the local retailers of past years, is conspicuous by its absence, having removed from the field, due to the inability of its owner to devote further time to it. The line has been split up considerably, the Winton, which was its leader, being shown by the factory people, who announce a Detroit branch to handle the retail trade here in the future. The Ford, De Luxe and Queen were unable to get the floor space desired in the show proper and an-

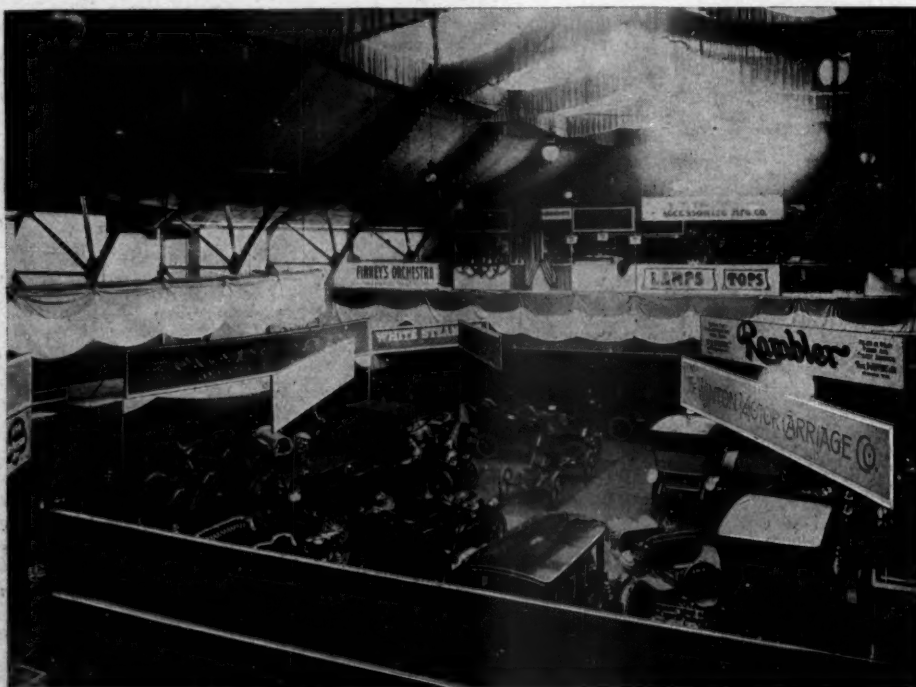
nounce separate shows in their downtown salesrooms, only a block away.

A considerable feature is the gathering of motor cycles in the basement. For some reason these machines have failed to make much of an impression in the local trade, but this season the dealers are booming them with unusual ardor. One lone bicycle, a National in the exhibit of John B. Trossel, formed an eloquent commentary on bygone days.

The gallery exhibit of accessories is by far the best systematized of any of the former shows. This was arranged with the paramount idea of comprehensive use to the users of motor cars and lamps, bat-

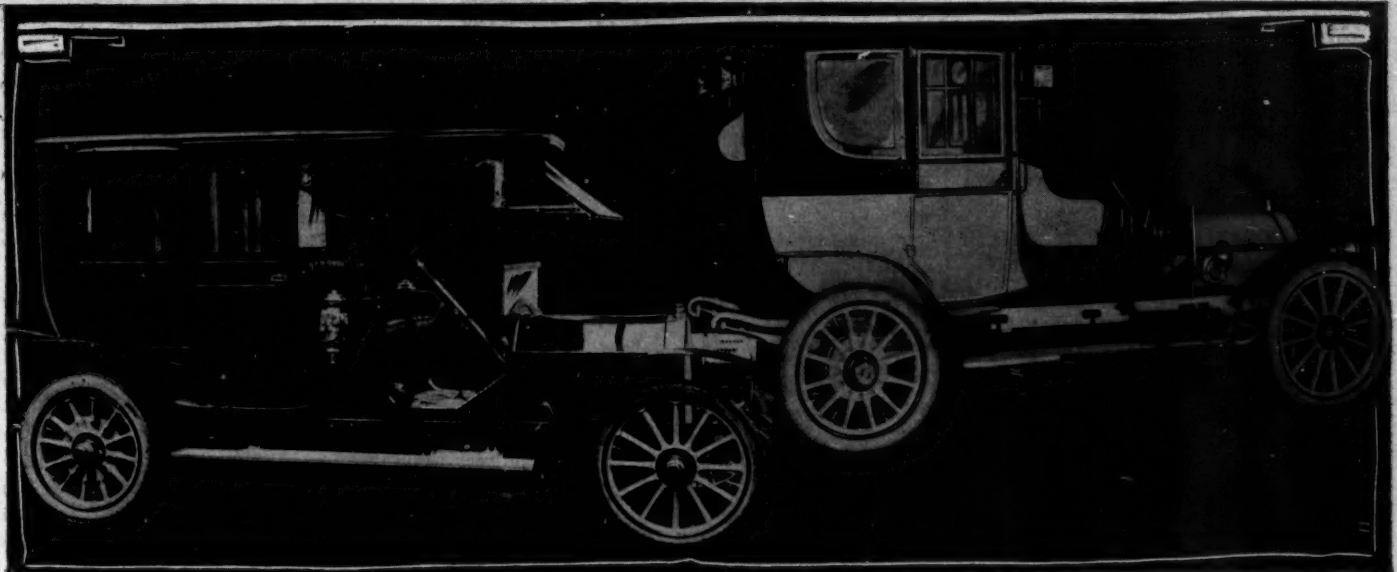
teries, springs, shock absorbers, tires, speedometers, coils and tops, clear down to motor clothing of all sorts, formed an interesting display to any motorist. The crowd packs the gallery to its utmost and jams into the blind ends in a good-natured but almost immovable mass. The opening day and today afforded little opportunity for demonstrating on account of the cold which was extremely severe and today a petition to the weather man for an amelioration of the conditions would have found a lot of signatures. However, the work of gathering the prospective purchasers together was certainly subserved by the show and there is plenty of opportunity for demonstration later on. While definite results in the line of sales could hardly be attained during the early days of the exhibition, the interest in general was plainly greater than ever before.

Nothing short of consternation marked the faces of many show visitors examining the Brush when told it eliminated entirely the sliding or planetary transmission and that a variable speed rolling clutch not only forms flexible connection with the motor but gives three times as many variations of forward speed as does a sliding gearset. This clutch, recently described in detail in *Motor Age*, is a simple device. The reverse is accomplished in the back axle and a clutch type of differential is used. Spring suspension is by four spiral springs, one at each corner. Apart from the novelty of the running gear and transmission standard styles rule in the carburation, cooling, ignition and lubrication of the motor. The steering gear consists of a small pinion on the base of the column, meshing in one side of a large internal gear to which is attached the radius arm with ball ending for connection with the steering knuckles.



GLANCE AT THE DETROIT SHOW, LOOKING TOWARD ONE END

HIGH ART BODY BUILDING IN CHICAGO



ISOTTA FRASCHINI LIMOUSINE

ART in body design was exemplified more at the Chicago motor show a week ago than at any other show ever held in America and perhaps more than at any other motor car exhibition ever held in the world. As pioneers in this line three cars stood foremost—the Apperson old English coach of 1820 lines, the Berliet D'Orsay brougham in coaching yellow color, and the Isotta Fraschini with regular limousine body finished in bronze green and characterized by side bow windows for the enclosed compartment. The Apperson old English coach was in bright red with black trimmings, an exact duplicate of color study as used in the latter days of the George III era before railroads had spanned countries. All of these three have special interiors, exemplifying the polished wood finish in combination with French whipcord upholstery and trimmings. The Apperson coach has a light mahogany interior with polished ceiling to match; the Berliet interior is in a different shade of mahogany with French whipcord upholstery to match the body finish and in the Isotta is a green whipcord finish to harmonize with the bronze green exterior.

Novel in all three is the use of a semi-cylindrical compartment in the rear of the back half way between the top of the seat and the ceiling. In olden times this compartment was known as the sword case in which all the protective weapons of the driver were carried and from which they were extracted through a door above the seat. In these peaceable days the sword case serves as map carrier, or repository for road guides and other light touring requisites. Viewed from the rear the compartment is

scarcely noticeable and ordinarily would pass for a ventilation device. Novel also in all three bodies and features which exemplify the art of C. P. Kimball & Co., Chicago, Ill., builders of all three, is the carrying of two rear lamps high up at the rear of the enclosed part, with openings in the back through which the light shines but in which none of the inconveniences of inside lamps are encountered. These lamps carry red and green rear glasses, eliminating the use of the tail light other than for illuminating the number plate. Equally novel and a Kimball revival of old customs is the door shutters. The side doors carry large glass windows which drop out of sight when open. Also provided to fill the space occupied by the window in the door is a rising and falling wood framework carrying a fine dust screen in oval form in its center and across its bottom. History has it that in past years when the master or mistress rode in the carriage the glass was up but should the vehicle be returning or making a trip without either the glass was dropped and the screen raised, indicating that the owner was not riding within. In these

days screens will doubtless play an important role as dust preventers in summer time. Installed on all of these bodies are small ventilators in the top of the window above the back of the front seat. There are two of these, one at each side and with them in use a good circulation of air is maintained without the creation of drafts caused by raising windows. Still another evidence of the builders' art appears in the fashioning of the front of the enclosed compartment, making it follow the curve of the back of the driver's seat, this design giving considerable extra door room as well as materially increasing the floor space. The bodies are all outcomes of the ideas of C. P. Kimball, who for 16 years has made annual inspections of every European carriage builder's factory and who in these three designs has incorporated the latest tendencies, in fact, not more than one of each of these particular styles have as yet been seen in Berlin, London or Paris. Mr. Kimball states that those who had been patrons of fine horse-drawn vehicles were directly responsible for the fine motor car bodies of today, their aesthetic tastes having de-

manded something more refined and more artistic for their use than what was to be procured a few years back from motor car dealers—thus the advancement in body building. He declares that when the users of horse-drawn rigs first took up motoring they insisted on having something more luxurious than the bodies then in use—something that made comfortable riding. The result of their protests is seen in the fine bodies now turned out by the body-builders in this country for the motor car trade.



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NH Van Sicklen, Manager

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MOTOR AGE



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HAS MOTOR AGE MADE GOOD ITS PROMISE?



DURING the late fall Motor Age announced to its readers and its advertising patrons that it would issue in connection with the three national motor car shows—the palace show in New York in December, the garden show in New York in January and the coliseum show in Chicago in February—editions that would surpass all previous efforts so far as Motor Age or any other motor car publication was concerned. It promised more and better reading matter, it promised a greater profusion of illustrations, and it promised to be first on the ground.

Has Motor Age made good its promise? The best answer to this question is a summary of what Motor Age published in the three issues in question, not alone that relating to the shows themselves but to other interesting matter:

	Pages on show	Total pages	Pages adver- tising
Palace show issue, A. M. C. M. A.	104	122	136
Garden show issue, A. L. A. M.	89	104	138
Coliseum show issue, N. A. A. M.	88	112	270
Totals	281	338	544

The issue devoted to the exhibition of the Automobile Club of America and the American Motor Car Manufacturers' Association, held in the Grand Central palace, New York, from December 1 to 8 inclusive, contained 122 pages of reading matter and illustrations; it gave a description of each car exhibited and all the important accessories; it illustrated and described all the mechanical features on all the new models; it illustrated all the cars and the important accessories; it told the story of the show by word and by illustration, and it contained 136 pages of advertising. On top of all this, notwithstanding the fact that Motor Age was printed a thousand miles from the scene of action, it was the first motor car publication to reach the exhibition hall, being 24 hours ahead of even the first New York publication and days ahead of any other.

The performance was repeated in connection with the exhibition of the Association of Licensed Automobile Manufacturers, held in Madison Square garden, New York, from January 12 to 19. This time, too, it was a good day ahead of all competitors in reaching the exhibitors and the public at the show, being in the garden at 1 o'clock on Thursday of show week. This issue like its predecessor was replete with illustrations of the cars, the accessories, the features of the show itself and with a carefully-prepared description of each car and each important accessory exhibited, together with the customary technical story, news stories and other interesting features that go to make a paper complete.

Three weeks from the closing of the second New York show the big western exhibition opened in the Coliseum building in Chicago. Notwithstanding the drain on the vitality and ingenuity of the staff another show wonder made its appearance, greater and better, if anything, than either of the two previous issues. In this there were 112 pages of reading matter and 270 pages of advertising. The 112 pages of reading matter were divided as follows: Reading matter devoted to the show report, 45; illustrations devoted to the show report, 44; miscellaneous reading matter and illustrations, 23; total pages of reading matter and illustrations, 112. Each car that had not been described in one of the previous show issues was completely described in this number, each of these cars was illustrated, likewise the important accessories and mechanical features.

It has been said comparisons are odious—they are, to the other

fellow. Of the 112 pages of reading matter in the Chicago show issue eighty-eight were devoted exclusively to the show, eight to technical matters and sixteen to miscellaneous news and special topics; that portion devoted to the show contained 3,186 square inches of engravings and 67,650 words of reading matter.

Here in the great west was held the biggest and most representative show of the year, the most successful from a sales point of view, the one really national show—a show in which Motor Age, notwithstanding the elaborate reports of the New York shows, could find hundreds of things to describe and illustrate, while other papers passed the affair off in a few words, ignoring to a large extent this gigantic trade affair, either from inability to gather and present the news to their readers or from a desire to ignore the hundreds of concerns that made up the list of exhibitors. In the following table, showing the amount of space devoted to the show, the number of words are based on an average of count and the illustrations on actual measurement:

	No. words reading	Sq. In. Illus- trations
Chicago show report		
Motor Age	67,650	3,186
Automobile	18,324	421
Motor World	16,324	370
Automobile Topics	11,780	280
Horseless Age	4,400	...

Some other startling figures have been unearthed by the Motor Age statistician, all in relation to the three big shows that are now history. These illustrate again how well Motor Age covered the field from the news standpoint as against the other publications devoted to the industry. In this it will be seen that, notwithstanding the fact that Motor Age is published in Chicago, it outstripped its New York contemporaries, not only in the amount of reading matter and illustrations, but in the matter of splendid arrangement, beautiful printing and last, but by no means least, in the delivery of its issues to the readers. In the following table is shown the number of words devoted to each show by the various publications. Illustrations are measured as words in order to arrive at the amount of matter printed. The count is based on the average number of words contained in a page of each paper and this multiplied by the number of pages devoted to the show reports. The table is not claimed to be an absolute count of the number of words, but, averaged as it is, it gives the reader a clear idea of where Motor Age stands with relation to the other papers.

	New York A. M. C. M. A. show	New York A. L. A. M. show	Chicago N. A. A. M. show	Total three shows
Motor Age	156,000	133,500	132,000	421,500
Automobile	109,500	102,000	27,000	238,500
Motor World	49,000	51,800	22,400	123,200
Automobile Topics	27,072	34,968	15,228	77,268
Horseless Age	52,952	49,680	4,415	107,087

The last issue of Motor Age is responsible for some startling figures, a mere hint having been given in the issue in question. There were 23 tons 1,023 pounds of paper used to print the edition of 15,000. Each paper weighed 45½ ounces and was ¾ inch thick. If piled in a single stack the pile would have been 11,250 inches or 937 feet high. The size of paper used is 37 by 50 inches, so that if all the 195,000 sheets used in the entire edition were placed end to end they would have reached a distance of 9,750,000 inches, or 812,500 feet, or 153 miles 4,660 feet; placed side by side they would have reached 7,215,000 inches or 110 miles 2,040 feet. All this paper, figured on the basis of square feet, would represent 2,505,208½ square feet or 57½ acres, a single acre being represented by 43,560 square feet.

Has Motor Age made good its promise?



CURRENT COMMENT



THIS is the time of the year when anti-motoring legislation is proposed in great quantities in all the legislatures throughout the land. Massachusetts has motoring antagonists who desire to have motor vehicles built so they cannot travel over 20 miles an hour, as if this might be a solution of the speed trouble. As a matter of fact, as has been pointed out before, it is not the question of speed that should be considered in any manner or form but time, place and circumstances. It will take a good many years to pound into the minds of some people this fact, although it will eventually be recognized as the proper thing upon which to base motoring laws. In Pennsylvania a more drastic speed law is desired, where the maximum rate is proposed to be only 15 miles an hour. All these measures would be unnecessary if the authorities were well enough versed in their own lines of business to so control traffic as to make it agreeable to all users of the highways. In nine cases out of ten it is more the fault of the authorities than the motorists, although, of course, motorists are not by any means always excusable. The motorists of Indiana have just won a victory by killing off a lot of nonsensical bills that were introduced in the legislature wherein extreme minimum speed laws only were to rule. The motorists of Indiana, a couple of years back, worked hard to secure the passage of a bill that seemed to be not only fair to motorists but to all citizens, and were well satisfied to let well enough alone. Some of the motorphobes of the Hoosier state, however, could not withstand the prosperity of others and in fits of jealousy

COMING MOTOREVENTS

February 18-23—Fifth annual exhibition of the Cleveland Automobile Dealers' Co., in Central Armory.

February 18-23—Buffalo show, in Convention hall, Automobile Club of Buffalo. D. H. Lewis, manager, Teck building, Buffalo.

February 18-24—Show at San Francisco under auspices of Automobile Dealers' Association and Automobile Club of California, in Coliseum.

February 23-26—Automobile Club of Italy, Coupe des Voiturettes.

February 25-March 2—Show at Portland, Me., in Auditorium.

March 4-11—Show at Kansas City, Mo., in Convention hall.

March 9-16—Fifth annual show of Boston Automobile Dealers' Association, in Mechanics' hall and Horticultural hall. Chester I. Campbell, 5 Park square, Boston, manager.

March 13-16—Omaha's second annual show.

March 18-23—Show at Providence, R. I., in Infantry hall.

April 2-15—Monaco meeting.

April 6-13—Montreal, Canada, second international motor car and sportsman's exhibition. R. M. Jaffray, manager, 309 West Notre Dame street.

attempted to undo what had been accomplished. All of these wild bills have been defeated and the Indiana motorists feel secure for at least another two seasons, when all antagonism will have been wiped off the board for all time.

WHEN the Chicago show ended Saturday night it was the consensus of opinion that this particular motor car exhibition had been one of general good for the trade and that the amount of business transacted had been greater than that at either of the New York shows and even more than had been expected. The attendance during the first part of the week was hardly up to the expectation of the management, but the last 3 days it was so great as to bring the average up to a point exceeding expectations. There was hardly a single exhibitor who did not go away satisfied with the amount of business transacted. It was noticeable among other things that the old custom of making demonstrations has become almost obsolete. The amount of demonstrating at both the New York shows and that held at Chicago was insignificant compared with that of a year ago. Nowadays people go to shows to look over the finer points of a car, knowing well that practically all are quiet-running and thoroughly reliable. There was at this show a tendency to purchase higher powered and more expensive cars, which indicates that the demand for extremely cheap cars is not so great among those who have heretofore used cars as might be expected. Most of the buying of the cheaper grades of cars came from points considerably west of Chicago and from among beginners. During the holding of the Chicago show there was more or less agitation over the question of holding an early fall show by the A. M. C. M. A. and it was rumored this organization was to demand of the N. A. A. M. that it hold a show not later than November or December. This, however, evidently was not taken seriously, inasmuch as Manager Miles took occasion to announce that the dates for the next Chicago show had been set for February 1 to 8, 1908. There is little probability Chicago will see a motor car show earlier than that time.

CONTINUED experiments in the matter of fuel for internal combustion engines indicate that at no future date alcohol, and possibly kerosene, will be used in place of gasoline. The Maxwell people in a recent test found that on a basis of 20 cents a gallon for gasoline the same work could be accomplished with alcohol

if the motor were properly fitted and properly made at about 22 cents a gallon. In this particular experiment kerosene proved to be a little cheaper than the alcohol. All of this indicates that with the advent of distilleries for the manufacture of denatured alcohol and a special designing of motors and carbureters for the use of alcohol, this fuel will, at least so far as this country is concerned, supersede the more volatile fluid now so generally in use. The Maxwell test proved what other tests did, that motors do not develop knocking on a high spark, that there is an absence of odor from the unburned charge, an absence of vibration and that, above all things, the dangerous element of an explosion had been practically eliminated.

THE matter of economy of operation is being considered more seriously by the makers of motor cars than it ever has been before. This is illustrated by the fact that the manufacturers of the Silent Knight car have brought the question of economy down to such a fine point that they feel justified in issuing a sweeping challenge to the world for an economy test and have deposited a good-sized check with the Chicago Motor Club to back up their claims. There appear to be no strings attached to the defi and if other makers have sufficient confidence in the economical abilities of their motors some extremely interesting tests may be assured for the early summer months in and about Chicago. These tests will undoubtedly be made with gasoline as fuel and if they pan out, as it may be expected they will, further tests may be made with alcohol.

THE WEEK IN BRIEF

Chicago show comes to an end, General Manager Miles announcing next Coliseum exhibition will be held week of February 1-8; independents talking earlier show; Benjamin Briscoe succeeds James Couzens as chairman of A. M. C. M. A. management committee; Coliseum annex destroyed by fire.

Report of committee on Maxwell gasoline-alcohol-kerosene test from New York to Boston made public; gasoline holds its own, but committee believes there is future for alcohol; kerosene makes good showing.

Dr. W. F. Bacon, of York, Pa., discovers in island of Jamaica motoring paradise; trip is made immediately after the earthquake and proves utility of motor cars as did the San Francisco horror.

Minor show circuit begins, with Detroit staging an elaborate exhibition in which Detroit-made cars are feature; building tastefully decorated and large crowd turns out opening night.

Hoosier motorists in Indiana legislature, lawmakers agreeing that no change will be made in present measure during present session.

Flag-to-flag motor boat race starts from Miami, Fla., for the Bahamas, six boats leaving under escort of gunboat Scorpion.

Leon Serpollet, pioneer in French motor car industry, dies from cancer of stomach.

AGAIN NAMES FEBRUARY DATE

Manager Miles Announces 1908 Chicago Show Will Be Held Same Month as This Year—Independents Talking of Demanding Earlier Exhibition Next fall

Chicago, Feb. 12—The seventh annual Chicago show came to a successful close at 11 o'clock Saturday night and even before the exhibitors had started getting out of the building General Manager Miles announced that his eighth effort would be put on the week of February 1-8, 1908. This comes on top of persistent rumors that the American Motor Manufacturers' Association is talking of demanding of the N. A. A. M. an early show—say in December. The gossips say if the N. A. A. M. refuses to listen to the demands of the independents that the latter will proceed to put on a show of their own, just as they have in New York. While nothing authoritative was done at the annual meeting of the A. M. C. M. A. at the New Southern last Thursday the line of talk handed out by the promoters of the early show gossip is that the independents probably will enter into a partnership with the Chicago Automobile Club, just as they have with the Automobile Club of America in New York with the Palace show.

If there is any truth in all this talk it is not verified by facts. While undoubtedly there is a sentiment for an early show among the independents they have not gone so far as to put their demands up to the N. A. A. M. It had been expected there would be something tangible develop at the meeting last week, but all that was handed out for publication was the election, which resulted in the choice of Benjamin Briscoe to succeed James Couzens as chairman of management, with R. E. Olds vice-president, H. O. Smith treasurer, Roger J. Sullivan auditor and Alfred Reeves general manager. Three members were elected to serve 3 years each on the committee—Benjamin Briscoe of the Maxwell-Briscoe Motor Car Co., R. E. Olds of the Reo Motor Car Co., and H. O. Smith of the Premier Motor Mfg. Co. Roger J. Sullivan of the Wayne Automobile Co. was chosen to fill the vacancy caused by the resignation of A. C. Newby.

It also had been expected there would be something develop in the outdoor show situation but if the A. M. C. M. A. did anything along this line it is keeping quiet about it. However, it is freely gossiped around that the association will do everything in its power to create a sentiment for a December show. It is not believed it will receive the endorsement of the N. A. A. M. in the matter; in fact, the announcement of next year's dates by Manager Miles is taken as a distinct refusal of the N. A. A. M. to even consider such a proposition. Miles declares he is satisfied with his February dates and sees no reason for changing. There the matter

rests, although it may be possible something more will be heard from the independents later on. If they do decide to go in for a December show on their own hook they will have to seek other quarters than the Coliseum, for Manager Miles has that sewed up tight by a provision in his lease which forbids the holding of rival motor car shows in the building.

The scenes attending the closing of the show Saturday night were wild ones. Everyone was anxious to get out and at 10:15 p. m. the rush started. From the Pierce booth there glided the big red limousine and this was the signal for others to follow. The main exit was into the alley on the east side of the building and in 10 minutes there was a congestion there that threatened to stop everyone. The policemen puffed and panted and the negro hustlers fought to get through. One husky came along with a huge box on his head and it threatened to scrape the side of a limousine. The driver of the big car instantly pushed the box off the negro's head and saved the car. The negro started looking for trouble and he got it so quickly he ran to the gallery and summoned some twenty of his fellows who returned for a "Hey, Rube!" fight to avenge the insult. The motorists were ready and many blows were freely exchanged. Finally the black army was routed and fled before the whites, who started a cry of "Lynch 'em!" which lasted until the blacks had disappeared in the gallery of the Coliseum.

Mercury on the plaque and the statue of the winged god were souvenirs everyone coveted and as a result a general raid was made on the decorations. But Miles had been through the same thing before and each car was searched before it left the building. In this way many were recovered, but still in several stores down the row Mercury smiles down on the customers much as he did over in the Coliseum. Mercury was the only souvenir sought, though, for which Miles is thankful.

Mercury, by the way, had an exciting time of it during the week. Be it remembered he also serves as the Deming trophy and in that capacity he adorned the Maxwell stand. Along about Thursday one of the salesmen in the booth thought he would play a joke on the house by hiding Mercury in the back of a touring car. Ten minutes later all was excitement and the management was notified of the loss. Then the newspapers got hold of it and it proved good advertising ammunition for a time. After the excitement had died down somewhat and Miles' detectives were seeking everywhere for the trophy the

salesman sneaked it out of its hiding place and restored it to the top of the show case, its original perch. Then everyone had a good laugh and the incident was forgotten in the rush of the show.

Everyone left the show well satisfied with the week. As usual it had been chock full of business and few there were who did not have fat order books. This is perhaps more true of the retail than the wholesale business, for many of the makers came here with their agencies for 1907 all placed. If they hadn't been so well fixed they could have secured all the agents they desired here, for the retailers came from all parts of the country to get agencies. Many left disappointed, although a few managed to connect for outlying territory that some of the easterners had not assigned. Cars represented in Chicago fared exceedingly well and a big business along this line was reported. The demand was not confined to medium priced cars, either, one local concern reporting it had sold nine cars of the "big" class to customers here in town. Among the little fellows of course this number was trebled and then some. So everyone is satisfied—Miles, too.

One feature in connection with the show was the manner in which the local dailies handled the affair. Every one of them, with one exception, got out a special show number, each one of which bristled with advertising. No page was sacred in the Evening Post and motoring news was scattered throughout the paper. The Daily News carried show stuff in its regular edition as well as more of it in the sporting extra. The Journal and American, too, were on deck with interesting matter. The morning dailies spread themselves and the Record-Herald, Inter Ocean, Examiner, Tribune and Chronicle gave the show the right of way in its columns.

During the week the mechanical branch of the Association of Licensed Automobile Manufacturers resumed the session adjourned from New York. A. L. Riker was unanimously reelected president and W. S. Clarkson secretary. Then the members of the body took up their monthly discussion, this time the talk being on alcohol as fuel, shock absorbers, clutches and springs. A feature of the meeting was the presence of representatives of steel firms who gave illustrated talks on the treatment of spring metals. It developed from this talk that the designers have the most trouble with front springs. At the next meeting of the branch, which will be held in New York, racing cars will furnish the theme of discussion.

Another feature of the week was the formation of the Pioneers, a body made up of motor trade men who were connected with the bicycle business previous to 1894. The Pioneers have 105 members and at the meeting elected N. H. Van Sicklen president, D. J. Canary vice-president and W. J. Mead secretary and treasurer. They

had a merry time at the New Southern hotel, then adjourned to meet again during the 1908 show.

Lucky it was that the fire which last night destroyed the Coliseum annex did not occur last week when the seventh annual motor car exhibition under the auspices of the N. A. A. M. was being held. Lucky it was, too, that the exhibitors had removed all their effects from the annex as well as the other two buildings, for the flames made a clean sweep, the loss being estimated at \$50,000. A 2-foot fire wall saved the Coliseum, but for an hour the motor car row on Michigan avenue was threatened. The building was being prepared for the hardware show. The cause of the fire is unknown. It started in the basement of the annex. The structure will be rebuilt at once.

OUTLOOK IN LINCOLN

Lincoln, Neb., Feb. 9—Motor car traffic is advancing by great strides in Nebraska and the middle west, and the local dealers, with their fingers on the public pulse, have orders in the factories for more than 200 cars, to be delivered before March 1. That motor vehicles are to become an important factor in this section of the country is evidenced by the fact that the fourteen agencies in this city sold 142 cars in 1906. Half of these were purchased by Lincoln people and there are now over 150 such vehicles in Lincoln. Three mercantile motor cars are in use in Lincoln. The six dealers who are handling the fourteen local agencies are busily engaged in enlarging their offices and garages for the vast increase in business they anticipate. The H. E. Sidles Automobile Co., which had the agency for the Cadillac and Woods machines last year, has added the Buick and Babcock electric agencies. Its new garage, the largest in Nebraska, was completed last fall at a cost of \$28,000. This company sold seventy-nine cars last year, and has orders in the factories for 117 more for this season. Of this number twenty-seven orders already have been placed. The Wittmann & Beach Co., agent for the Popes, has a large garage and repair shop.

GOOD ROAD IDEAS

Spokane, Wash., Feb. 8—M. E. Louis, secretary of the inter-mountain wagon road commission, has submitted his report for 1905-06 to Governor Gooding of Idaho, making recommendations that the roads be built by a state road commission handling the entire appropriation and not by individual road bills passed separately or en masse by the legislature; that the commission consist of the governor, a civil engineer and a mining engineer; that no roads be built unless a specified portion—say one-half—of the total cost of the road be paid by the counties or parties interested in the same, and that the portion be paid into the commission before the road is contracted.

UNIQUE SORT OF TEST

Chicago Motor Club Plans Economy Run Based on Challenge Issued by C. Y. Knight

Chicago, Feb. 12—For one of the red letter events of the campaign the Chicago Motor Club proposes to conduct next summer a unique sort of an economy test has been selected—something out of the ordinary, Chicago being used to traveling other than beaten paths. It all came about through the recent show. On Friday of show week Charles Y. Knight, of Knight & Kilbourne, makers of the Silent Knight, was struck with an idea and the idea taking root he promptly posted \$500 with the technical committee of the Chicago Motor club and challenged the maker of any car in the world which has the same piston displacement as the Silent Knight, or greater, to an economy test. The shot was well aimed and produced results in that it gave the technical committee an idea.

Seeking Mr. Knight for an explanation of his challenge, Chairman Beecroft and Mr. Knight broadened out the idea until now it promises to be startlingly original. In a nutshell Mr. Knight has turned over the \$500 to the Chicago Motor Club with instructions to go ahead and run the test as it wants to, only specifying that the contest be limited to cars of the class of the Silent Knight. Thereupon the technical committee got busy and decided to offer a \$400 trophy for the economy test in which piston displacement will be the basis for whatever handicap there is. As the rules are framed, each car must have a total weight with load with about 10½ pounds to the cubic inch of piston displacement and, failing to come up to this, a car must carry additional weight, dead or otherwise.

Believing Mr. Knight to be entitled to the greatest consideration in the matter, the committee decided to put on a preliminary, which will be run over a 100-mile course, the first three cars to qualify for a final against the Silent Knight. This final will be at least 300 miles, run over two courses—the eliminating route the first and third days, and another one on the second. As Mr. Knight is going to England in May to demonstrate the Silent Knight motor to some English manufacturers, the time selected for the test is early in August. A fee of \$50 will be charged each car and the entries will close 3 weeks before the eliminating trial. Only standard touring cars of the big class will be eligible for the contest against the Knight. No limit is placed on the size of the rigs, but each must carry its stipulated number of passengers, as, for instance, a seven-passenger car must carry seven people. Bodies must be standard, as well as the tires and the gasoline systems. Any gear ratio may be used and no

restrictions will be placed on the carbureter—it can be adjusted any way the owner wishes. Curtains on the radiators may be used and fans disconnected. The only stipulation made in this regard is that a car cannot use a water supply other than its regular equipment.

Ratification of the plan will be asked at a meeting of the board of directors of the Chicago Motor club which will be held Thursday of this week, at which time the club also will arrange its fixture list for the season. Another matter to come up is the resignation of President William H. Arthur, who finds himself compelled to retire because of the pressure of business.

AFTER JAMESTOWN SPACE

Norfolk, Va., Feb. 10—The attention of automobile manufacturers and dealers all over the country is being drawn to the Jamestown exposition, which opens near Norfolk April 26, as a valuable place of exhibit for motor cars. The demand for exhibit space in the manufactures and liberal arts and the transportation buildings has been so great that only a limited amount remains. In the section allotted to motor cars but 7,000 square feet of vacant floor space is now available, all the remainder having been taken. The exhibits in this department will be very comprehensive, covering the entire period of motor car development. Patterns of the rudely-constructed vehicles of the beginning age will appear alongside the powerfully-built touring cars, runabouts, delivery wagons and the many other forms of usefulness which have been developed from this new method of locomotion and transportation. Interest in the motor car exhibit is augmented by the fact that a large number of motorists are planning to visit the ter-centennial celebration in a body as the culmination of a series of tours in which motor cars from all the states as far west as the Mississippi river will have a part.

MARYLAND IN LINE

Baltimore, Md., Feb. 10—Under the leadership of the Automobilists' Protective League, Maryland motorists have inaugurated a vigorous crusade for better roadways in this state. Their first efforts are being directed to securing an improvement in the roadways of Baltimore county. It is the purpose of those behind the movement to first convince the commissioners of Baltimore county that there is a widespread demand among the taxpayers of that county for better highways. For this purpose it will be the effort of the motorists to secure the indorsements of the majority of the taxpayers of the county. The petitions being circulated ask that the county commissioners make the special road tax 35 cents instead of 25 cents, on each \$100, and that the income of the extra 10 cents be used in building new and better roadways.

FUEL COMMITTEE MAKES REPORT

Results of Maxwell Test from New York to Boston Show Gasoline Holds Its Own—Alcohol Found To Be Good Power Producer—Kerosene Works Well

New York, Feb. 11.—Details of the gasoline-alcohol-kerosene test from New York to Boston, conducted by the Maxwell-Briscoe company, have been given out, coming in the form of a report compiled by S. Y. Beach, of the Scientific American, and H. S. Sawyer and W. F. Schultz, of the American Automobile Association. Of course the chief interest in the test was centered in the performance of the car using denatured alcohol for fuel because of recent experiments along that line. The committee came to the conclusion that alcohol is about two and one-half times as expensive as gasoline and three times as expensive as kerosene. It is the conclusion of the committee that it will take denatured alcohol at 22 cents a gallon to compete with gasoline at 20 cents a gallon. A point brought out in favor of alcohol, though, was that it was impossible to produce the metallic knock or pound caused by a too advanced spark. This same thing was noted in the Chicago test of the Pierce Arrow. As in the Chicago affair it was noted that the alcohol car pulled better on the hills than the other rigs. In the New York-Boston test gasoline did 10 1-10 miles to the gallon, alcohol 8 13-100 miles and kerosene 7 4-10 miles. The report of the committee is as follows:

"The general interest which was shown in the comparative value test which was held January 26 to 30, 1906, between New York and Boston, and the very general discussion which it has since excited will make the official report which is given below of value to the motorist and layman alike. The trip was a unique one. Three cars identical in every respect as to motor, number of passengers and equipment succeeded in making the run to Boston, each of a different hydrocarbon and each with a clean record. Doubtless, the popular interest which was excited was to a great degree due to the fact that very unusual conditions were encountered. In fact, few high-powered cars, no matter how careful the preparation or how expert the driver, would attempt a run of nearly 300 miles in midwinter, zero weather and with a constantly increasing fall of snow. The run from New York along the old Boston post road to New Haven, Conn., more nearly approached the normal touring conditions of northern New England. After leaving New Haven, however, grades were steep, turns sharp and the snow increased in depth until, ultimately, even the hubs of the wheels were covered.

"The snow was not the soft, fluffy fall of a few hours but the closely packed, much harder substance which represents the accumulation of a number of days of

snow and low temperature. With the exception of a very few miles near three or four of the larger cities through which the route was laid, roads had been little traversed, ruts were deep and irregular and the severe strain on the motors caused by the difficulty in getting any sort of traction spoke wonderfully well for the strength as well as the adaptability of the engines with which the three Maxwell 1907 model touring cars were fitted.

"In attempting to deduce facts of value from the results of the test as given below, the above conditions must constantly be borne in mind in reference to the quantitative analysis. As to the qualitative analysis, conditions encountered were even more pertinent in that vastly more credit is due the type of car which was able to produce such gratifying results. This can only be qualified by the fact that great credit is due the drivers of the three cars—H. A. Grant, of Tarrytown, N. Y.; Thomas Toner, of New York city, and Charles Fleming, also of New York city. The facts as given below furnish the first authentic data of the comparative merits of denatured alcohol, kerosene and gasoline when used as fuel by motor-propelled vehicles with internal combustion engines. The comparative test run was in line with a series of experiments which have been conducted from time to time by J. D. Maxwell and H. A. Grant at the factory of the Maxwell-Briscoe Motor Co. at Tarrytown, N. Y. The two propose in the near future to go still further into the possibilities of denatured alcohol and some interesting results are promised.

"The distance of 249 miles was of sufficient length to allow of accurate comparisons between the three fuels. The test is also of interest as it was made under abnormal conditions, with snow varying in depth from 5 to 12 inches. From New York to New Haven the roads were in fairly good condition; beyond this point, however, deep snow was encountered all the way to Boston. The average number of miles per gallon of gasoline was 10 1-10 and by this standard comparisons with the alcohol and kerosene can be made. This average of 10 1-10 miles per gallon of gasoline must be considered good, as the going was so bad that in some instances second speed had to be used in descending grades. Under ordinary conditions the average per gallon of gasoline would have been 13 miles, both the alcohol and kerosene increasing in the same ratio. The three Maxwell touring cars used were standard 1907 models, fitted with double opposed motor, three-point suspension and shaft-drive. The cylinders having a bore

and stroke of 5 inches, compressing to 58 pounds. The compression should have been doubled and the stroke increased to have used alcohol to the best advantage, for under these conditions the thermal efficiency would have been approximately 30 per cent instead of about 20 to 21 as obtained ordinarily with the gasoline motor. Keeping these figures in mind, it would be necessary for denatured alcohol to sell in the market at 22 cents per gallon to compete with gasoline at 20 cents. The weight of the three cars, together with passengers and their equipment, was as follows: Gasoline, 2,270 pounds; kerosene, 2,520 pounds; alcohol, 2,750 pounds. The cost per ton mile, or in other words the cost of moving 1 ton 1 mile, gives an accurate basis of comparison on the relative merits and cost of the different fuels. The actual running time from New York to Boston, namely, 16 hours 20 minutes, gives an average speed of 15 41-100 miles per hour, a creditable showing, considering the condition of the roads. No adjustments were made during the entire trip and all carbureters were of the standard Maxwell type. No pre-heating devices were used in either the fuel or air, other than that regularly employed. The object of the test being to show that one carbureter can handle successfully fuels differing in density and as such, the results are the more valuable. The following table gives in a condensed form the comparison of the fuel costs of the three cars:

Car	Weight	Cost per Gallon	Total Consumption	Cost of Fuel	Cost per Car Mile	Cost per Ton Mile
Gasoline.....	2270	\$0.20	24.75	\$4.95	\$0.019	\$1.0169
Kerosene.....	2520	0.13	33.75	4.39	0.017	0.0139
Alcohol.....	2750	0.37	40.75	15.07	0.06	0.0448

"The miles per gallon of fuel are as follows: Gasoline, 10 1-10 miles; kerosene, 7 4-10 miles; alcohol, 8 13-100 miles. From the above table it is seen that alcohol is about two and one-half times as expensive as gasoline and over three times as expensive as kerosene when used in a gasoline engine of the present day. The test has, however, shown that it is a good power-producing fuel. The engine operating on alcohol pulled more strongly on hills than those operating on either kerosene or gasoline. In fact, it was almost impossible to stall the motor, the reason being that while the initial pressure with alcohol is less than with gasoline, the mean effective pressure is greater. Another advantage that can be accredited to alcohol is that it was impossible to produce that metallic knock or pound caused by a too advanced spark. In this respect, it was far superior to both kerosene and gasoline. It is, however, probable that when the compression is raised sufficiently high for economical operation, the engine will knock somewhat if the spark is too advanced. These advantages added to its cleanliness and lack of explosive qualities should make it a popular fuel for motor cars and there is

little doubt that in the course of the next few years it will be very largely adopted as a fuel for internal combustion motors."

This set of experiments by the Maxwell-Briscoe people probably will be only the first of many that will be attempted during the year. The bill taking off the tax from denatured alcohol has called the attention of the motorists to the possibilities of the fuel and naturally every effort is being made to adapt it to motor car uses. Not only is the east taking a deep interest in the fuel, but the west as well and it is more than probable some one of the prominent clubs will put on an alcohol test before long. One of the eastern organizations did plan one, but chose an inopportune time for it, so the idea was temporarily abandoned.

LIVELY QUAKER ELECTION

Philadelphia, Pa., Feb. 11—Over 200 of the 380 members of the Quaker City Motor Club were present at the club's quarters in the Hotel Majestic last Thursday night, when the first annual meeting of the new organization was held. The principal business transacted was the election of officers and as two or more candidates had been named for each office the contest was fast and furious. When the smoke cleared away it was discovered that the following had been elected: Charles J. Swain, president; George H. Smith, first vice-president; C. C. Fetler, Jr., second vice-president; A. F. Stewart, treasurer; T. B. Creamer, secretary. The foregoing and Nathaniel Hathaway, E. Hubbard Fitch, G. Hilton Gantert, A. E. Maltby, G. Douglass Bartlett, E. C. Leeds, W. Wayne Davis, E. C. Johnson and L. D. Berger constitute the board of governors. Immediately after the installation of officers the board held a meeting and outlined a program for the coming twelvemonth. The events which are under consideration include a hill-climb, a 4-days' endurance test and an economy run.

LEON SERPOLLET DEAD

New York, Feb. 11—A cablegram from Paris announces the death of Leon Serpollet. The death of M. Serpollet removed from the French motor field one of its leading pioneers and greatest originators. A cancer of the liver was the immediate cause of death. M. Serpollet's interest in steam machines dated as far back as 1888, when for the first time he mounted his boiler on a four-passenger motor car. Later he brought out the celebrated semi-flash generator that has since then been in constant use under the trade name of Gardner-Serpollet and later, within the last year, as the Darracq-Serpollet. The Serpollet car figured prominently in early road races, but since the production of the high-powered gasoline machines the company's interest was confined to the production of pleasure cars and commercial machines for the world's market.

IN FLAG-TO-FLAG RACE

Six Motor Boats Start From Miami, Fla., to the Bahamas—Enjoyable Time in the South

Miami, Fla., Feb. 9—The entire harbor fleet of yachts, motor boats, auxiliaries, house boats and launches will be illuminated and decorated tonight and parade on Biscayne bay. Then there will be an elaborate fireworks display on a float anchored off the shore front. A ball at the Royal Palm hotel will follow. Thus will Miami's first annual regatta week be brought formally to a close. In the variety of the water contests conceived and carried out by the committee and the all around interest the races have aroused Miami's first attempt at a carnival afloat has been a success which argues well for the more ambitious yachting and boating regatta planned for the next and succeeding years.

There has been racing morning and afternoon over a 2.1-mile course. It has been a run of less than 2 miles down to General Louis Fitzgerald's palatial houseboat Bonito, which has served as the start and finish mark and as official and press boat. Clustered around her each day has been a big and picturesque flotilla of water craft of every kind carrying big loads of spectators in the gay finery of summer flannels and linens. There have been races for speed boats, for working launches, for auxiliaries, for sailing dories and for canoes. At times two or three contests have been in progress at once, so that simultaneously the bay has been dotted with white sails and the water has been tossed into foam by rushing motor craft. The Dixie has again been the star of the carnival though her performances have been confined owing to some clutch troubles to competition in the 21-mile endurance run yesterday and a mile trial the opening day, which netted her 29.23 statute miles per hour. Briefly summarized the speed boat handicap results have been as follows:

Race of 4.2 nautical miles

Boat	Owner	Statute miles per hour
1—Swallow	E. H. Godshaek	20.2
2—Simplex	H. Broesel, Jr.	16.7
3—Hot Stuff	B. J. Southard	18.0

Race of 8.4 nautical miles

Boat	Owner	Statute miles per hour
1—Hot Stuff	B. J. Southard	18.0
2—Swallow	C. H. Godshaek	20.0

Endurance race of 21 nautical miles

Boat	Owner	Statute miles per hour
1—Simplex	H. Broesel, Jr.	16.2
2—Swallow	E. H. Godshaek	17.1
3—Dixie	E. J. Schroeder	26.4
4—Mera	W. I. Hufstetler	13.5

The Floridian pilgrimage of E. H. Bayne from Bay City, Mich., was in vain. Her flywheel got loose and many ills to which motor machinery is heir befell her engine, so that an informal mile trial which showed 22 statute miles per hour was her only return for her long journey. Commodore J. H. Allen, of the Halifax Yacht Club, how-

ever, has bought her hull and will install in it the engine of the Comet, a successful performer at Palm Beach last year. The much touted flag-to-flag race from Miami to Nassau has had its ups and downs of hope and fear. The non-arrival of the United States torpedo boat Scorpion, which is to act as convoy to the racers across the wobbly gulf stream to the string of keys embraced in the latter half of the run to the Bahamas' capital, owing to her having been blown out of her course and having to put into Nassau, cast somewhat of a damper on the race. In fact several faint-hearted entrants showed symptoms of blue-funking. Morgan, however, was equal to the emergency. He called to his aid his friends among the newspaper men. The result was a conference last night of all hands with the president of the Miami board of trade. The scribes agreed to charter and enter two boats of their own and the board of trade president pledged his body to do the same and to canvass the town for syndicates to charter and nominate boats.

The Scorpion sailed from Nassau yesterday and is expected here early tomorrow morning. The race will start from just outside the harbor at 5 a. m. on Tuesday. The first day's run will be across the gulf stream to Gun Key, a distance of 60 miles. On Wednesday the boats will race to Frazier's Hog Key, and on Thursday conclude the contest at Nassau, a distance of 160 miles in all. Whether the long distance race for the magnificent silver trophy given by Commodore J. H. Allen, of the Halifax Yacht Club, from Miami to Daytona, 265 miles, will be run this year will depend on the commodore's ability to secure a worthy enough list of entries. As he otherwise prefers to save the cup for another year.

LONG RACE STARTS

Miami, Fla., Feb. 11—Special telegram—Unexpectedly the gunboat Scorpion reported here for duty to convoy the fleet of motor boats taking part in the flag-to-flag race which started from here today. The end of the race is the British flag at Nassau, the Bahamas. Six boats started in the event, a gun from the Scorpion at 7 o'clock being the signal to start. The race is divided into two classes, with first and second prizes in cash and handicapped by mutual agreement before the start. The power boats to compete are H. C. Roomer's Roamer, 40-horsepower Standard engine; F. T. Budge's Dorothy, 16-horsepower Otto, and the Miami board of trade's Mindaneo, 25-horsepower Standard. In the auxiliary class are Captain Albert's Meriel, chartered by the Morgan-Lazarnick-Spooner-Wetmore syndicate; the Belle of the New York Motor Club, fitted with a 10-horsepower automarine engine, and Captain Bell's Klondyke, chartered by Henry W. Merrill and fitted with a 10-horsepower International engine. A thrilling race is anticipated by the captains.



THE READERS' CLEARING HOUSE



TREATING RUSTED PISTONS

Ridgeway, Pa.—Editor Motor Age—Will you please inform me through the columns of the Readers' Clearing House how to start a motor when it is impossible to crank it? The car when last run worked splendidly, but it has been standing for 5 months. I think the reason I am unable to crank it is because the piston rings are swollen from the cold. I have injected kerosene in the cylinders, but without result.—Reader.

The rings and the piston are probably rusted to the cylinder wall, as a small amount of moisture may have remained in the cylinder when left standing 5 months ago. Kerosene if injected in the cylinder in liberal doses and permitted to stand several days will cut out the rust sufficiently to permit the crankshaft to be started. When started it will be well to take off the cylinder and clean the piston, rings and cylinder thoroughly. Heating the cylinder with a torch sufficiently to thoroughly warm it will aid in the work, but care must be exercised to not overheat it and to see that it is heated evenly. "Reader" has not followed the advice that has been given in the columns of the Readers' Clearing House or his motor would not be in the condition it is.

TWO-CYCLE TROUBLES

Iowa Falls, Ia.—Editor Motor Age—I would like to have you answer some questions in regard to the erratic actions of two two-cycle engines, either by letter or through the Readers' Clearing House. The first engine is 3 by 3 inches, made by Bloomstrom Motor Co., of the two-port style, the exhaust being about $\frac{3}{8}$ inch long and transfer port $\frac{1}{4}$ inch long, the former opening $\frac{1}{8}$ inch or 3-16 inch before the latter. Jump spark is used. I am experimenting on throttle control and it bothers me by frequently firing back into the crankcase. Sometimes it will run satisfactorily for a long time, but if the gasoline feed is cut down it speeds up and develops more power, until it suddenly backfires and stops. Would a gauze screen in the feed port help any? It would seem that if there is flame in the explosion chamber at the time the feed port opens there would be serious pre-ignition, which could be but little improved if the flame were prevented from traveling to the case by the gauze. Again the engine, after running well for some time, will without any apparent cause speed up and backfire, as described. The carburetor is of my own make, very similar to the Holley. The mixing chamber is choked to 7-16-inch diameter around the spraying nozzle, yet on low speeds liquid gasoline drops from

the bottom of the carburetor. Should it be choked still more? The crankcase compression is low, probably not more than $2\frac{1}{2}$ pounds, and the cylinder compression is about 55 pounds. The second engine is of my own make, $3\frac{1}{2}$ by $3\frac{1}{4}$ -inch, with ports somewhat larger in proportion than in the other and a crankcase compression of $4\frac{1}{2}$ to 5 pounds and it pre-ignites badly and backfires occasionally. The former engine runs up to 600 revolutions and the latter up to 1,200 revolutions. The combustion chambers of both are clean and free from soot or projecting points. Is feeding a very rich mixture the only help for the troubles?—Orley Truman.

The trouble in the first engine is evidently due to slow combustion of the charge. The most obvious conjecture is that the spark lead has not been increased in proportion to the speed of the engine. A throttled charge also requires a very early spark. A gauze screen in the transfer passage would prevent the flame from striking back into the crankcase, but it is understood the Elmore Mfg. Co. holds some sort of a patent on this device. Apparently the dripping of gasoline on the bottom of the carburetor is due to the spring on the auxiliary valve being too stiff. See the article on adjusting a carburetor spring in Motor Age for November 1. The cylinder compression is fairly high for this type of engine, and should be sufficient to ensure complete combustion of the charge if the spark is reasonably strong and properly timed. If the spark will not jump $\frac{3}{8}$ to $\frac{1}{2}$ inch in the open air it is not strong enough. The pre-ignition in the second engine may possibly be due to a portion of the core not having been cleaned out from the jacket spaces in the cylinder or head. It may be, however, that it is due to the inner end of the spark plug being too hot, or to the deflector plate on the piston head being cast too thin or too high, so that it is overheated by the combustion.

SEES DANGER AHEAD

LaCrosse, Wis.—Editor Motor Age—In looking over the issue of Motor Age for February 7 I notice some comments about motorphobia in some of the different states. There is nothing said in these articles about the Wisconsin proposed legislation and I wish you would look into that. There are some of the craziest forms of legislation suggested that it is possible to imagine, and if some of the bills now before the Wisconsin legislature are passed motoring in Wisconsin will be dead. I certainly will not want to run a car under such laws, and I think you will be doing the motoring fraternity a good turn by taking up this matter.—Paul W. Mahoney.

MAKING CALCIUM CARBIDE

St. Louis, Mo.—Editor Motor Age—I have a friend who wants to make calcium carbide, as he has the limestone and charcoal on the land he owns and labor is cheap. As I understand it is necessary to have the powdered lime and coke or charcoal heated in an electric furnace to a fluid condition, and on cooling this fluid crystallizes into fused calcium carbide. Is there any other way of making this stuff without having an electric furnace or of mixing the powdered lime and carbon in an economical way?—A. W. D.

There is no way of preparing calcium carbide on a commercial scale except by the aid of an electric furnace, since the heat of the latter is necessary to produce the reaction between coke and powdered lime, which is a very refractory material. Calcium carbide can be prepared in the laboratory without the electrical furnace as follows: Mix together about twenty parts by weight of precipitated calcium carbonate, ten parts by weight of powdered magnesium, and four parts of carbon previously calcined in a platinum crucible. Put the mixture into a wrought iron pipe closed with a screw cap at each end, but having a small hole in the upper cap, and heat it in a blast forge. When the tube becomes bright red sparks begin to fly from the vent hole, and a violent reaction follows. On cooling the tube a porous friable mass is found within, which is composed of calcium and oxide of magnesium



On account of the high price of magnesium this is not a commercial proposition.

BET OPEN TO ANYONE

Sumter, S. C.—Editor Motor Age—Yours to hand enclosing my certified check for \$100. I am very sorry indeed that Mr. Ford will not run the race—or endurance test—and am anxious to know his reasons. We put the matter up to him in the way we did simply because he comes out frequently with advertisements claiming that he has the best car for \$1,000 or less, and I want him to show us just how much better it is than the Reo runabout. If he can show us we want to buy about ten carloads. He challenged every manufacturer in general, and the Maxwell-Briscoe people in particular, for a race. His challenge was not accepted, and we wanted to see him get his wish. We do not deny that Mr. Ford may have the best car selling for less than \$1,000, but we will have to be shown before we will believe it. If any friend or any of Mr. Ford's star agents wish to accept the proposition, it is still open. Thanking you to publish this, I beg to remain.—T. B. Jenkins.



LEGAL LIGHTS AND SIDE LIGHTS



MANY BILLS IN BAY STATE

Motoring legislation in generous doses is going to be ladled out by the Massachusetts legislature this year if all the bills that have been presented are enacted into law. Eight bills have been put in the house and three into the senate. These are exclusive of the one big measure that is to cause the greater fight, the one to tax motor cars according to horsepower or weight. One petition has been presented by Calvin Coolidge, who wants to have a limit of 20 miles an hour placed upon all motor vehicles. In his bill he intends that no cars capable of a greater speed shall be licensed to run in this state. He proposes that any person who builds a car that is capable of going faster than 20 miles an hour shall be fined not more than \$100 or 6 months imprisonment. He needs to study up a little on constitutional law. Mr. Coolidge is a member of the legislature, too. Samuel L. Porter has a better idea of legislation from a motorist's point of view. He has presented a bill seeking to have all the fines for violating the laws go to the state treasury for the benefit of the state highways. At present in Massachusetts many towns unjustly fine motorists in summer to secure money to pay the expenses of the places. In one town the salaries of the police and firemen were increased because of the large amount collected from motorists. Frederic Tudor, who was the first man to take out a license in the bay state, has presented two petitions that are worthy of consideration. The first relates to accidents. At present in case of a mixup the law provides that the motorist must furnish information regarding it to anyone. Mr. Tudor seeks to have it amended so that drivers of carriages shall also have to do the same, thus putting them on an equal footing with the motorists. Mr. Tudor's second petition is one that is much needed. It reads: "Any person taking, using, interfering or tampering with any motor vehicle without having the permission of the owner or someone having authority to grant such permission shall upon conviction be fined not exceeding \$100 or be imprisoned not exceeding 30 days." There have been cases where persons have taken cars with the connivance of watchmen and used the machines at night, for which they received pay. This money has been divided between the parties. Accidents having occurred and the owners having not only to pay for the damage to their cars but also face civil suits because of their cars being out without their knowledge led to the presentation of the act. Prescott Keyes, one of the judges of a local court and a motorist, has sent in a petition that should pass

without trouble. It asks that all carriages carry lights at night. The motor cars carry front and rear lights and it is only fair that market wagons and other vehicles using the roads at night do the same. William D. Sohier has sent in a petition to prohibit motor vehicles from using certain public and private ways from which they are already excluded. As there are signs up on all such ways at present and penalties are prescribed for doing this there seems no sense in the present bill. Daniel F. Hay has sent in a petition that may pave the way for races such as the Vanderbilt. It is doubtful, however, if it ever is passed in conservative Massachusetts. It is to the effect that the mayor of a city or the selectmen of a town may in their discretion upon special occasions and subject to reasonable conditions, close the public ways and grant permits to persons to operate motor cars at any rate of speed during a specified time and upon specified portions of the public ways. Frank W. Barker intends that persons doing a livery business in motor cars shall not be cheated out of the price of the fare.

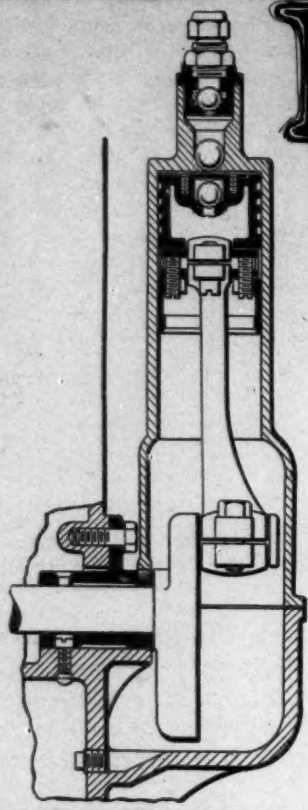
HOOSIERS WIN A VICTORY

A decisive victory has just been won by Indiana motorists in the defeat of all motor bills pending before the legislature in that state. Not only have all bills been defeated but it is understood a promise has been given that no measures of this nature, tending to change the existing law, will be passed at the present session. As is usually the case a number of new members of the house of representatives sought sudden fame through bills decidedly unfavorable to motor cars. The first introduced was one limiting the speed to 3 miles an hour in passing vehicles and changing the size of registration numbers from 4 to 8 inches. Another solon proposed to make a driver guilty of manslaughter who carelessly struck and caused the death of a person. One day last week these bills were reported unfavorably by the house roads committee and the members killed them in one-two-three order. The fathers of the bill offered some objection but their protests were snowed under by an avalanche of defeating votes. A bill providing penalties for reckless driving is now before the senate, but it is understood that this measure is also scheduled for an early death. The fight made by motorists against the bills was a remarkable one. The bills were introduced unexpectedly but the Indiana Automobile Manufacturers' Association organized quickly and with the aid of attorneys fought the measures night and day and succeeded in defeating them.

NEW QUAKER MEASURE

Senator Crawford has introduced in the Pennsylvania legislature a new motor vehicle law. It provides for the annual registration of motor vehicles at a charge of \$3, the state issuing tags as at present. Operators other than the owner must become licensed drivers, paying a fee of \$2 and wearing a badge when driving. No person under the age of 18 will be permitted to operate a car under any circumstances. Non-residents whose cars display tags indicating the state by which they are issued are exempt from the registration and license provisions for a period of 10 days. The rate of speed permitted is a mile in 4 minutes where houses are less than 100 yards apart, reducing speed to a mile in 6 minutes at curves and cross streets, a mile in 2 minutes where houses are more than 100 yards apart, reducing to a mile in 4 minutes at curves, cross roads, descending steep hills and passing other vehicles. This is limited by the usual provision forbidding any speed greater than is safe, considering road and other conditions. No local ordinances fixing lower rates of speed are permitted except in cases of parks and boulevards, where, however, the rate shall not be less than that permitted horse-drawn vehicles, and the erection of signs is required. Physicians answering emergency calls and vehicles used by the military, police and fire department are, when in the performance of duty, exempt from speed restrictions. The customary regulations as to brakes, lights and signal devices are included, and operators of motor vehicles are required to give such reasonable notice of their approach as the safety of the public requires, and in meeting animals that appear to be frightened or unmanageable to stop without waiting for signal to do so. An effort is made to place motor vehicles on exactly the same basis as horse-drawn vehicles in the use of the highways and to induce the displaying of a light by all vehicles. The penalties for the violation of the law are as at present except that the operation of a motor vehicle by any intoxicated person renders him liable to a fine of \$100 or 30 days' imprisonment. The rules of the road are plainly indicated and the bill is a decided improvement on the law at present in force. It has the approval of the state highway department and is endorsed by the Pennsylvania Motor Federation as while it protects the public in its use of the highways it will tend to free motorists from the petty persecutions of the past years. Should this bill become a law the present method of licensing would continue in effect until the end of the current year before the change is made.

MOTOR CAR DEVELOPMENT

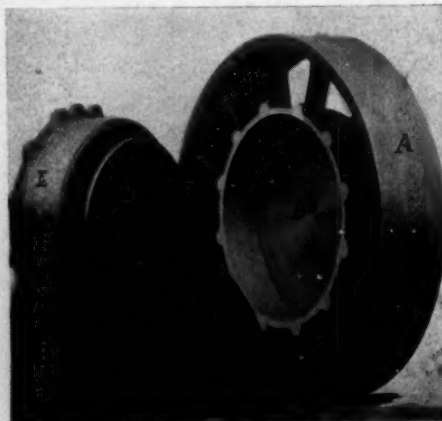


NORTHERN AIR PUMP

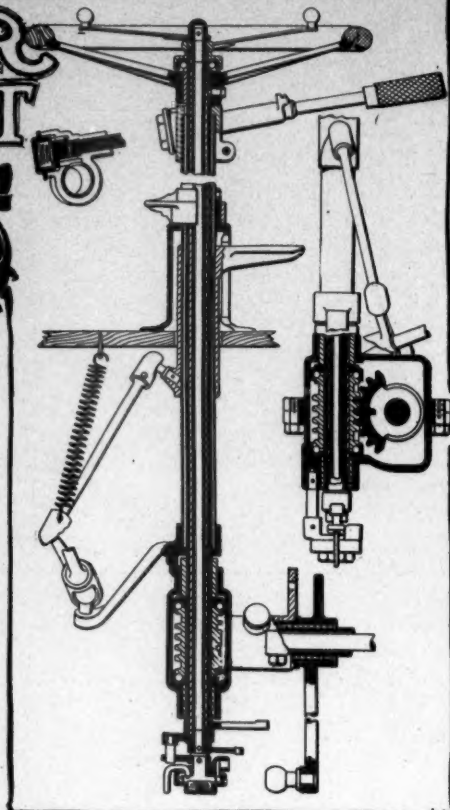
TO THE Northern Motor Car Co., Detroit, Mich., is due the credit of presenting the most startling innovations in American motor car building introduced within the last few years. The car incorporating these innovations is known by the trade name of model L and is a 50-horsepower product with a four-cylinder motor, sliding gear transmission and shaft drive. Novel in this car is, first of all, an air-controlled flywheel clutch. The regulation motor car has in the flywheel a cone, disk, expanding or clamping clutch actuated by the power of a coil, spiral or other shaped spring, but in the Northern L what might be termed a disk construction is used. Rigid in the revolving part of the flywheel is a leather disk $\frac{1}{4}$ inch thick and 14 inches in diameter. Adjacent to it is a metal disk of the same character and thickness. This disk is carried on the front end of the shaft connecting with the transmission. Air pressure is the medium by which the leather disk and the metal disk are locked together. The air pressure is produced by a plunger pump driven off the rear end of the camshaft. The control of the air to the clutch is by one-fifth revolution of the handle grip on the change speed lever. This is not all. Yet another count must be included in this Northern L air control. The clamping camel's hair-lined brakes, acting on drums on the rear wheel hubs, are clamped on the drums by air pressure—truly a lesson learned from the steam locomotive, or the high-powered electric street car. The control of these brakes is from the lever on the steering

NORTHERN MODEL L

wheel that controls the throttle. With this lever in its neutral position a forward movement opens the throttle and from the neutral a backward movement applies the brake. Thus the throttle is closed before the brakes are applied and the motor reduced to low speed. One step further in the innovation enumeration shows the four vertical cylinders are cast in one piece, a practice coming in for considerable attention abroad, according to the counts made at the Olympia show and the Paris salon. The Northern company casts the four in one piece because it is possible to perfectly finish the interior of the walls of the four, having the bore of one cylinder parallel with that of the other three. Making this casting from a grey iron formulae has not presented any of the numerous difficulties heard of a season or so ago regarding unit motors; in fact the company's engineer claims the large casting is almost as easy to manufacture as are other castings including but a pair of cylinders, and that should one cylinder of the four be injured a new casting costing \$80, a sum little in advance of the cost of a casting for a pair of cylinders, can be utilized. Another point not to be overlooked is the use of an angle iron frame, the reason for which is that the company has used this style of frame in its two-cylinder machines from the first. In that time, while the cars have met with various accidents, these frames never have been once put out of commission. Still another constructional feature—not a new one in American practice—is that of forming the gearbox



ASSEMBLY AIR CLUTCH

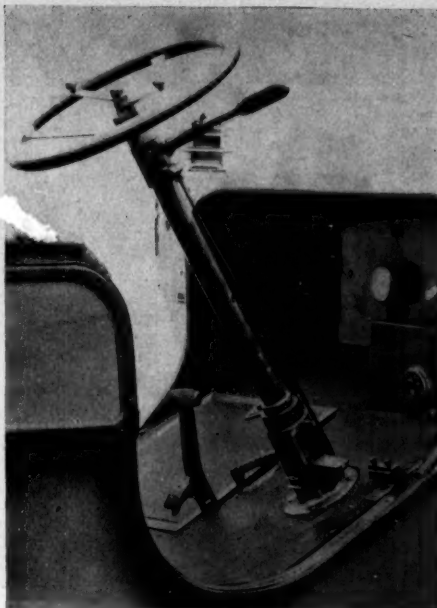


NORTHERN STEERING COLUMN

for the change speed set in unit with the differential housing and carrying it in the form of a forward extension of the differential neck. Added to this now considerable list of out-of-the-ordinary designs is that of clashing the reverse pinions into mesh, a practice used by Peerless and Packard companies this year. To go further, the platform rear spring suspension has the cross spring supported by a trunnion to the center of the cross piece of the mainframe, this allowing of one rear wheel mounting an object of considerable height without the level of the car frame or body being molested. One of the illustrations seen on, a following page demonstrates this. Worthy of note in this spring suspension is the bushing of all shackle pins and the fitting of a compression grease cup to each, there being no less than ten of these grease cups needed in the rear platform system. Last but not least in this novel Northern L is the dispensing with the conventional starting crank, which is owing to the air control system. Instead of the crank is a ratchet-starting arm. Coupled with this arm is an automatic spark-retarding device, preventing any possibility of a back fire. In this general survey nothing of a particular or detailed nature in the car has been referred to, the aim being to give the average reader a general conception of the air principles in use in this machine. Now follows a detailed consideration of the many parts of the car.

Air for operating the clutch and running brakes is supplied by a plunger pump, like

a fifth and miniature cylinder with piston, carried vertically at the rear of the cylinder casting and driven off the end of the camshaft. The air cylinder has a diameter of $2\frac{1}{4}$ inches and a stroke of 3 inches, the piston at the top of the stroke, as indicated in the sectional drawing of this pump, being close to the cylinder head. In the upper part of this pump are three ball valves. The lowest, in the piston head, is for letting air out of the crankcase into the cylinder above the piston on the down stroke. On the up stroke this valve closes and the air is forced past the middle ball valve and passes out by a copper tubing to an air tank 3 inches in diameter and 16 inches long, carried on the front side of the dash underneath the bonnet. The top ball valve is a safety or escape valve. Above this ball is a spring normally set so the valve does not raise off its seating until a pressure of 75 pounds to the square inch is attained with the air system. After this limit this valve allows a pressure escape back into the crankcase, the air being conducted into the crankcase to deaden the hissing noise which accompanies its escape at this pressure. This top valve is normally set for the 75-pound pressure but the spring above the ball can be tightened so the valve will not open until a pressure of 150 pounds to the square inch is attained, which pressure is much more than required for engaging the clutch or running brakes. When so high a pressure is in use there is more strain—unnecessary strain—on all parts of the clutch and brake. The pump piston being attached to the camshaft reciprocates at but half the speed of the cylinder pistons.

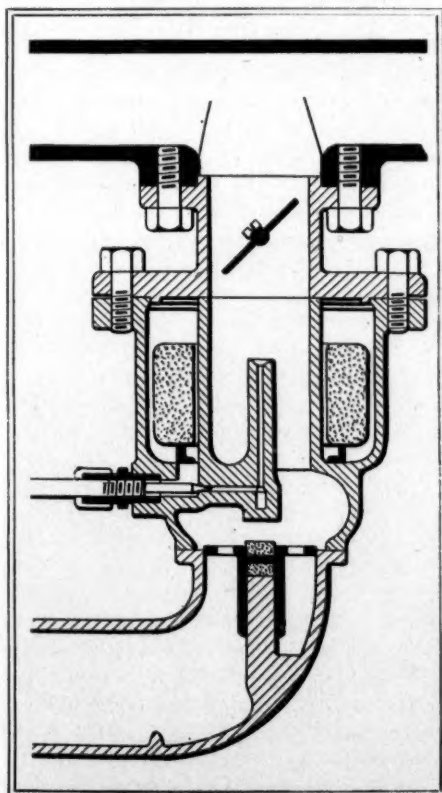


REVERSE PEDAL AT COLUMN BASE

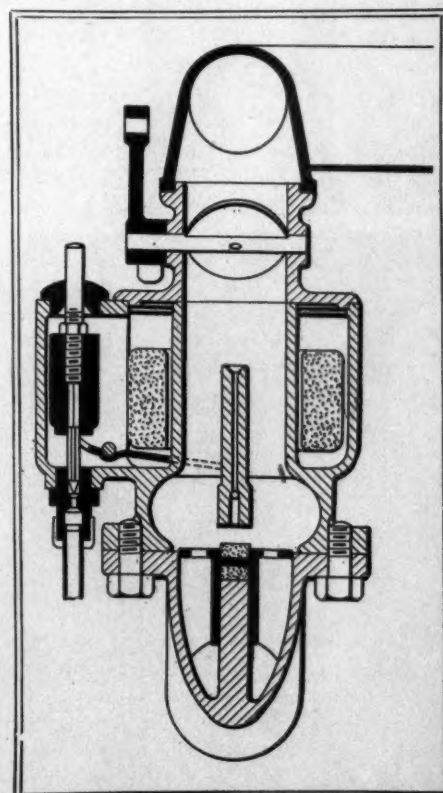
Its piston is a regulation cast iron piece carrying four eccentric compression rings at its upper end, and having connection with the throw on the camshaft through a hollow wrist pin held to the piston bosses and connecting rod split at both ends and fitted with accepted metal bearings.

The conducting of the gas or air pressure from the tank on the forward side of the dash to the clutch will first be considered. Owing to the control of the clutch being in the long horizontal lever grip on the steering column immediately beneath the steering wheel, it is necessary to conduct an air lead from the tank up the outside of the steering column to the clutch air valve carried within the lever hub for attaching the lever to the column. From this air valve a tube leads directly to the forward end of the crankshaft. This shaft is bored throughout its entire length providing a 5-16-inch opening through which the air passes. At the rear end of the crankshaft the air escapes and presses against a 14-inch leather disk C or diaphragm held at its perimeter or outer edge firmly into the flywheel so that whenever the flywheel revolves it turns with it. Behind this leather diaphragm is a steel plate D or disk 14 inches in diameter and $\frac{1}{4}$ inch thick and carried on the forward end of the shaft connecting with the gearbox. The incoming air hits the center of the leather disk, forcing it against the metal plate, causing the plate to revolve, thus transferring the engine power to the driveshaft. Letting more air in causes the pressure to spread over the leather disk from the center outward, thus pressing the entire disk against the steel disk and so giving positive drive, or the same result as when a cone clutch is completely engaged, or when a disk of any other type of friction clutch is fully engaged. The reader will note that with this Northern air clutch slipping is possible by letting in

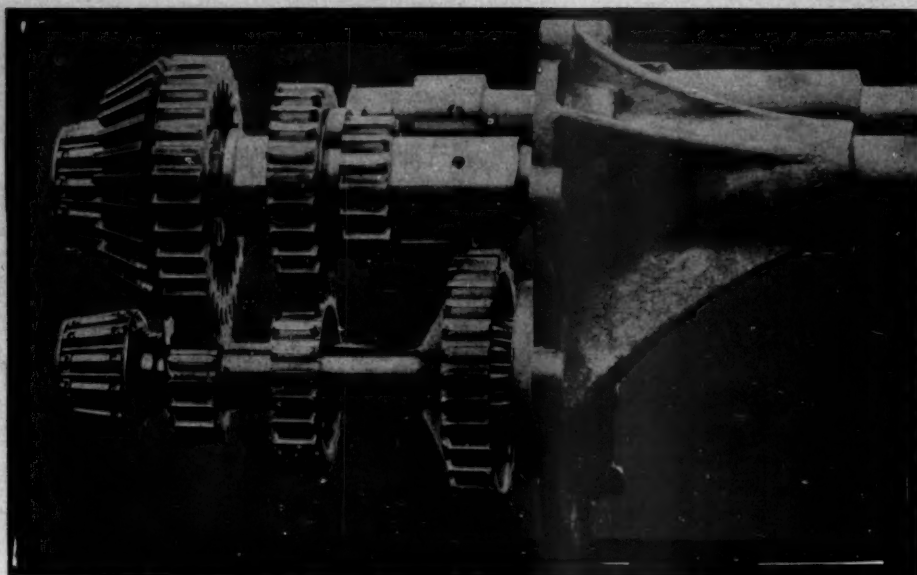
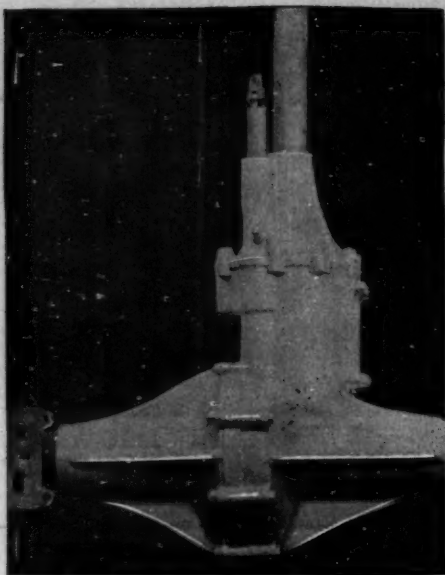
a little air and so holding the center of the leather diaphragm in contact with the steel disk at which time the friction contact will not be sufficient to cause the metal disk to revolve at the same speed as does the flywheel and its leather diaphragm. This is equivalent to slipping in a friction clutch. The pressure on 14 inches diameter exerted on the leather disk totals 11,550 pounds, or practically 6 tons. This is with a pressure of 75 pounds to the square inch. With this pressure it is possible to perform any pulling task called upon by a motor car and to prove the adaptability of the air pressure for clutch work it is possible, should the air system become deranged, for an adult to blow with sufficient pressure into the air leads to engage the clutch and cause the car not only to go itself but to pull three of the two-cylinder Northerns behind it, this being equal to a 3-ton load. The metal disk within the flywheel is backed up against a fiber plate embedded in the flywheel, this backing preventing any disk springing. The air is admitted to the clutch simply by turning the handle grip on the change speed lever one-fifth revolution forward. A partial movement of this grip gives partial engagement. When the air pressure is cut out the air within the clutch compartment as well as that in the crankshaft and air piping to it falls to atmospheric pressure by a portion of it escaping from the air valve at the top of the steering column. It is this falling to atmospheric pressure that causes an immediate release between the leather diaphragm and metal disk constituting the clutch. The leather used is a good grade of sole leather. As



SIDE SECTION NORTHERN CARBURETER



END SECTION NORTHERN CARBURETER



COMBINED NORTHERN DIFFERENTIAL AND GEARBOX, TOGETHER WITH STRIPPED GEARSET

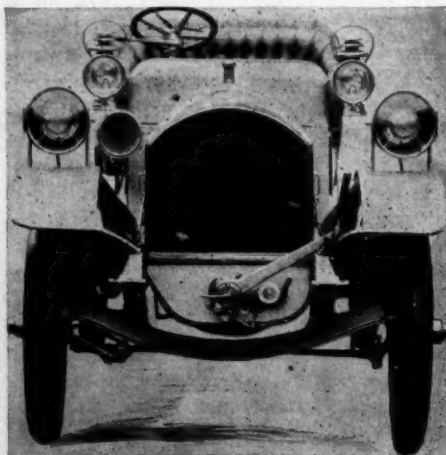
to its wearing qualities the company claims to have driven one car 20,000 miles after which time no appreciable wear was to be found.

Thus far the air problem has been referred to only in connection with the clutch operation; now comes the piping arrangement necessary in utilizing air to apply the clamping rear hub brakes. On the left of the car beneath the footboard and supported on the inside of the angle iron main frame is a tiny cylinder, 5 inches long and 2 inches in diameter. This cylinder inclines forward at an angle of 45 degrees. Working in this cylinder is a metal piston with leather packing to hold the air pressure. The forward end of the rod from this piston has the usual linkage with the brakes and into the rear end is an air pipe through which the air enters, forcing the piston outward and thereby applying the brakes. Releasing the air releases the brakes, the piston being forced back into the cylinder by atmospheric pressure. The control of the air for this brake system is from the right lever above the steering wheel. This lever in its forward position has the throttle wide open; moved back one-third closes the throttle to low running speed and a further backward movement applies the brake. The air valve for this part of the system is at the base of the steering column. Air from the tank on the front of the dash is conducted by a tube to this valve and another tube leads from the valve to the rear end of the cylinder on the left side of the car frame already referred to. Air released from the brake system passes into the atmosphere at the foot of the column. It is understood that with the car standing and the motor not running no air pressure is on hand to hold the brakes and for use in all such cases an expanding pair of brakes operating within the drums on the rear hubs is used. These expanding members are babbitt faced rings expanded by cams through pedal action. A ratchet fitted to

the pedal allows of leaving the brakes set at any tension. Thus in this unique car the side lever emergency brake is eliminated; in fact, there is not a side lever on the machine and only one pedal.

Motor Age recalls but one other case in American car building where air brakes were used. This was a Tinscher car exhibited at the Chicago show 3 years ago. On this car the air was carried at high pressure in a special tank and drawn from the tank as required. In the Northern system such a reservoir tank is not essential. Although a small one on the front of the dash is used it can be cut out if desired. This Northern tank serves to carry a supply of air to be used for inflating tires. Before departing from this consideration of the air system it is of interest to note that last year in its air-controlled car the Northern people used an air pump with 3-inch bore and stroke, whereas this year the bore is but 2 1/4 inches. Last year the piston did not go to the top of the piston—this year it does. Last year a pressure of 60 pounds to the square inch was used for regular work but now 75 pounds is deemed better.

In making particular reference to the



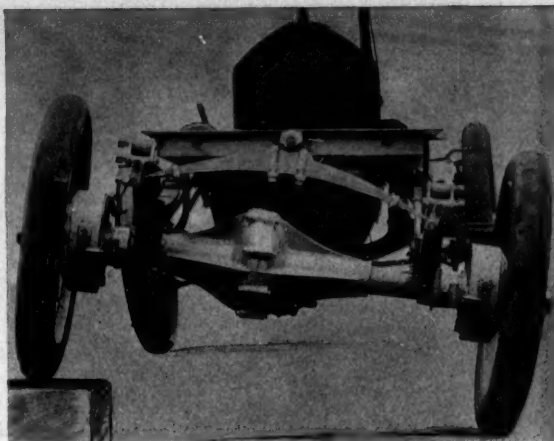
PAWL AND RATCHET STARTER

motor construction consider first that it is composed of two castings, the large upper one forming the four cylinders with the water jackets and also constituting the upper part of the crankcase, and the lower casting forming the base of the crankcase and the oil basin. In the former is carried the three crankshaft bearings as well as the bearings for the camshaft, both sets being removable without disturbing the cylinder casting, which is supported direct on the side pieces of a subframe. Last year a 3/4-inch water space was used in the jackets; now this measures almost 1 inch. As might be expected the water space around the four cylinders is not continuous; rather there is a vertical partition between the second and third cylinders, so that while the four cylinders are in one casting the water system is identical with that in a four-cylinder motor where cylinders are cast in pairs. Water enters the jacket for the two front cylinders at the lower right, with the intake pipe reduced in diameter and carried to the rear where it enters the jacket for the two rear cylinders at a similar place. Exit is from the top at the left. Circulation is by centrifugal pump carried on the forward part of the camshaft, this shaft being extended through the pump to take the timer located beneath the radiator. The water jacket space extends well down almost to the base of the cylinder wall so that with the piston, at the bottom of the stroke, three-quarters of its length is water-jacketed. A fan is carried from the front of the cylinder casting and adjustable by a vertical rod with the finger cross on its top, a few turns of this giving any fan belt tension. Increased air current is provoked by fan blades in the outer portion of the flywheel. Valves are carried in the cylinder heads and in housings threaded into the heads, the water space rising practically to the top of the housing. Actuation of the intake and exhaust valves is by a single camshaft with integral cams.

carried on the left side on a level with the crankshaft bearings.

In lubricating the motor, the mechanical oiler, with its many leads to sights on the dash and other leads to the parts of the crankcase is eliminated. In the base of the crankcase at the side is a large oil reservoir with its opening to the crankcase interior regulated by float. This float, similar to that within the regulation carbureter, rests upon the oil level within the crankcase, maintaining it at a fixed level by admitting oil from the reservoir. When the level falls it shuts off this flow when the predetermined level is obtained. Within the case is a splash system, oiling the three bearings of the crankshaft, the four lower and upper bearings of the connecting rods, with three bearings of the camshaft and the cylinder walls.

Mixture is supplied by a float feed carbureter illustrated on a preceding page. Two views are given—both sectional—one from the side as if the observer were facing the side of the motor and the other from in front. Air enters at the base through a curved pipe which rises vertically to where it joins the intake manifold. Just above the bend in this pipe is an expansion into which enters the horizontal fuel pipe from the gasoline tank. Above this expansion is the vertical spraying nozzle. Surrounding the nozzle portion of the pipe is a float chamber with ring float. To one side of this is the loaded needle valve acting by a lever from the float. Obstructing the air pipe just below the spraying nozzle and the expansion in the pipe is a high speed lifter valve. With low and medium motor speeds this valve remains seated, the air passing through a series of holes in its seating. With increased speed, sufficient air not being able to enter through these holes, the valve lifts off its seating admitting air



CROSS SPRING TRUNNIONED TO FRAME

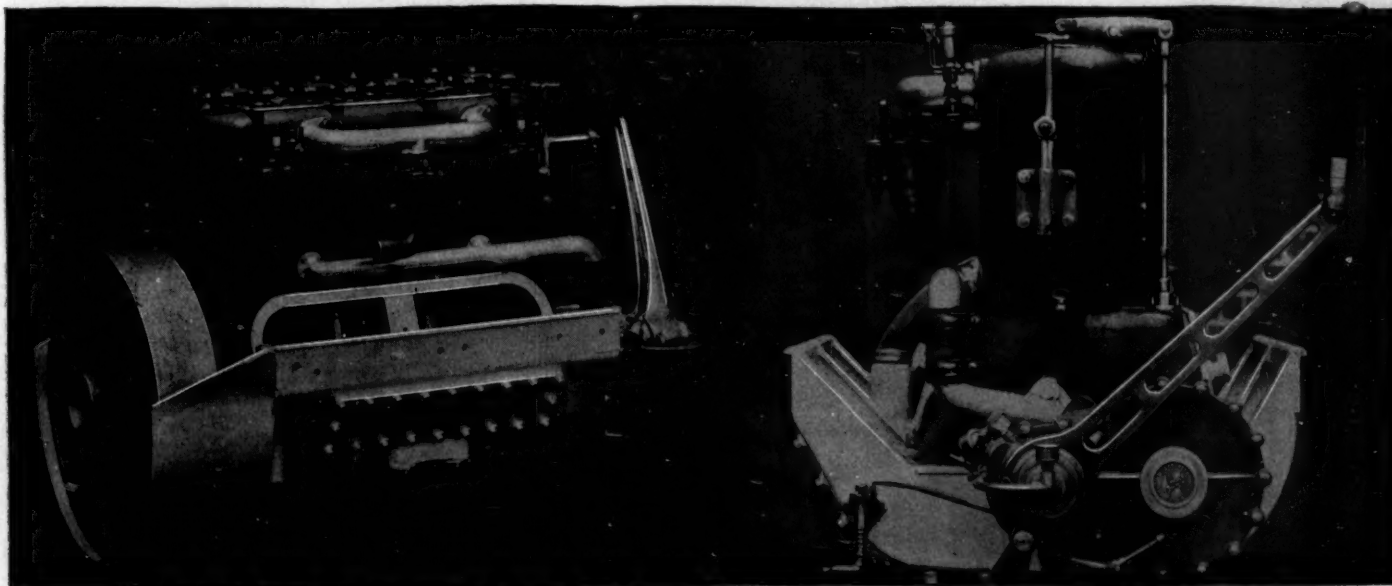
around its sides, thus proportionately diluting the mixture. A turn wheel on the dash in front of the driver permits of adjusting the needle valve in the nozzle at any time. The intake pipe as illustrated is a simple Y but on the latest cars this manifold is an oval shape with its sides made parallel and the ends communicating with the front and rear two cylinders and the carbureter attached to the center of the outer pipe of the oval. This arrangement permits of no counter currents from one end to the other or from one arm to the other as occur in Y shaped pipes. The air intake is a steel lined hose of large diameter extending to beneath the front seat, where the company claims to take in pure air. Ignition is by jump spark with approved fittings, the only feature of the system being the carrying of the plugs in sockets threaded into the cylinder sides at the right. Priming cups are carried close to the plugs and in the same sockets, as are compression reliefs. The starting ratchet on the front end of the crankshaft has a cam piece for automatically retarding the spark should it be advanced.

The Northern transmission, giving three forward speeds and a reverse, is carried in

unit with the back axle. The gear-set operates on standard sliding gear principles. The case and gearset design are conventional, the former with the front end a removable plate through which opening the gears and shafts are put in place, and the latter made with the mainshaft on top, the countershaft immediately beneath it and the reverse gear clashed into mesh. All shafts are carried on Timken roller bearings save the front end of the mainshaft, which has its support on a race of balls. The changing of speeds is by a horizontal lever on the column beneath the steering wheel, a practice followed in America by the Pierce people and used abroad by Darraq builders. This lever in forward position gives high or direct speed. Brought back one position it is neutral, another position is intermediate, then comes another neutral point and finally slow speed. There is thus a neutral point between each two successive positions. To get reverse the lever is put at the first neutral position and a pedal on the right of the column pressed down, this movement revolving the gearshifter rod and clashing the reverse.

WHITE'S STEAM SYSTEM

White steam cars for the present season are decidedly different in the manner in which the water control to the generator and the fuel control to the burner are accomplished. Last year the water passage to the generator was controlled by a diaphragm governor which bypassed the water to the water pumps above a certain pressure and the thermostat that regulated the fuel entrance to the burner according to the temperature of the steam in the generator. Now the thermostat controls the auxiliary passage of water to the generator and this water flow is also under control of the bypass diaphragm with its by-



NORTHERN MOTOR WITH CYLINDERS CAST INTEGRALLY AND MECHANICAL VALVES IN HEADS

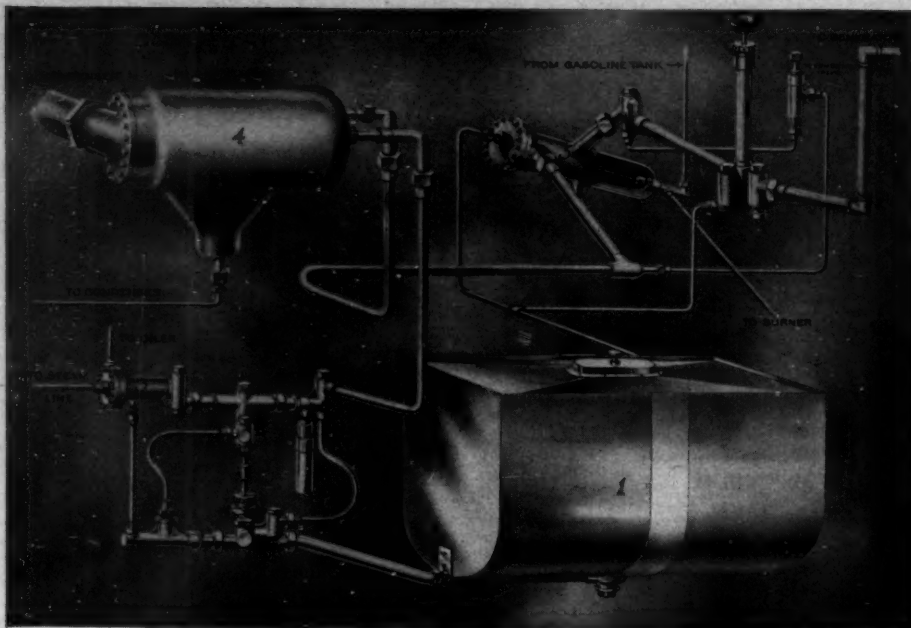
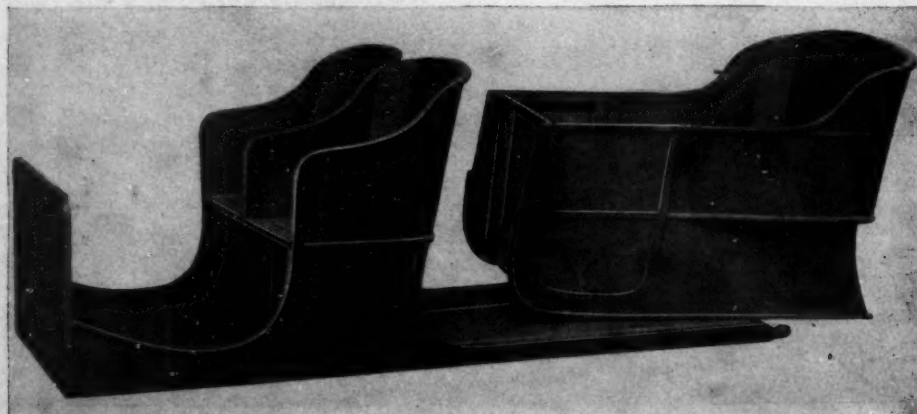


DIAGRAM OF WHITE WATER CONTROL SYSTEM

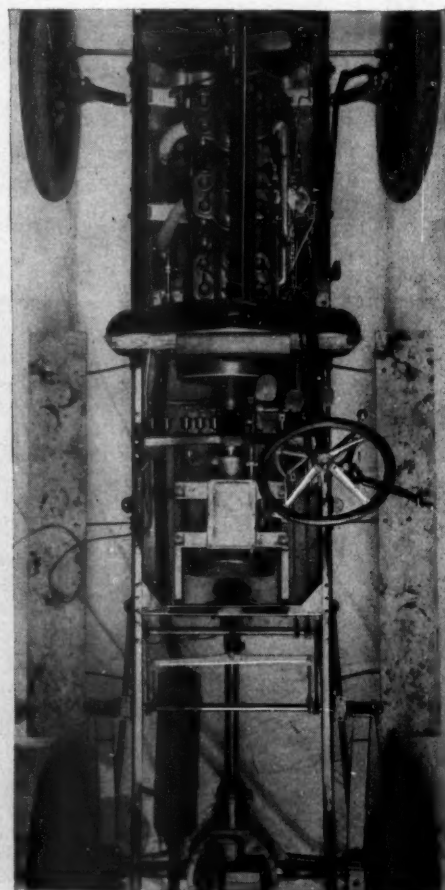
passing, as used for 6 years, and added to this regulation is a flow water regulator described in detail later. Close attention is invited to the two illustrations of the White system, the larger diagrammatic one showing all of the pipings. In this illustration 1 marks the water tank with its supply for the generator and water from which must reach the generator through the exit pipe seen in the upper right corner of the diagram, and it is the purpose of these paragraphs to show how the water reaches this point and what regulations it is subject to. By way of preliminary explanation 2 and 2' mark the pumps constantly sending water from the tank 1, at 4 is an expansion containing a coil of piping for heating the water on its way to the generator and incidentally cooling the steam from the engine to the condenser. At 3 is the diaphragm regulator, 5 marks the water flow regulator and the thermostat valve is marked. Start with water leaving tank 1 and forced by pumps 2 and 2'. Whenever the steam pressure exceeds the normal working pressure of 600 pounds to the square inch the diaphragm water regulator 3 opens a bypass valve and diverts from the generator the stream of

water from the pumps. When the steam pressure falls below 600 pounds the regulator again acts, closing the bypass valve, and the water from the pumps is again directed to the generator. From the pumps there are two separate and distinct paths by which the water may reach the generator. The path which will first be considered is through the flow regulator 5. Whenever water is flowing to the generator it will pass through this first path; that is, through the flow regulator, but only when additional water is needed will the other path be open. The flow regulator is a compact and simple device with two distinct functions. First of all, it is so constructed that it will permit only a definite quantity of water to pass through it. That is, once having been set to allow the passage of a certain quantity of water per unit of time, by no means can water be forced through it at a greater rate. Its second function is to regulate the supply of gasoline to the burner. The flow regulator consists primarily of a cylinder A, containing a piston B, the cylinder being grooved so that the water may pass around the piston. The effect of the passage of water through the device is to move the

piston against the action of a spring C to a distance which depends upon the rate at which the water is flowing through it. When moved to the extreme end of its range the piston opens the bypass valve D, thus allowing to return to the tank all water in excess of the predetermined maximum for which the flow regulator is set. As regards the second function of the flow regulator, it will be noted that the piston is connected with the needle E, which controls the fuel valve F, and it follows from what has been said that when water is passing through the flow regulator the motion of the piston opens the gasoline valve. This valve is so shaped that a varying quantity of fuel passes through it, according to the position of the piston. When there is no water passing through the flow regulator the piston is no longer under pressure and the action of the spring returns it to its original position, this motion serving to close the valve in the gasoline line, thus shutting off the supply of fuel to the burner. Whenever the pressure is below 600 pounds water is being pumped into the generator and part of it at least is passing through the flow regulator. Fuel is admitted to the burner whenever water is passing through the flow regulator. It follows, therefore, that whenever the steam pressure is below 600 pounds the fire will be "on," and conversely, whenever the pressure is above 600 pounds the fire will be "off." It is obvious that the instant the engine stops the fuel supply will be shut off.

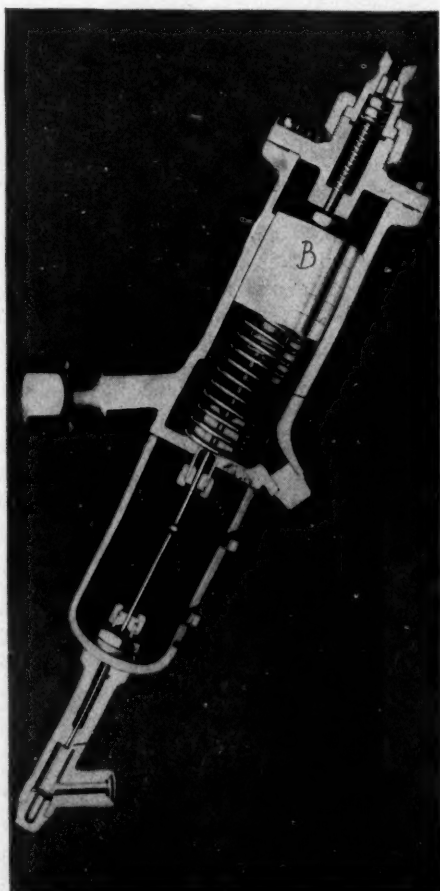


BORBEIN'S PRESIDENT BODY WITH DETACHABLE SEAT

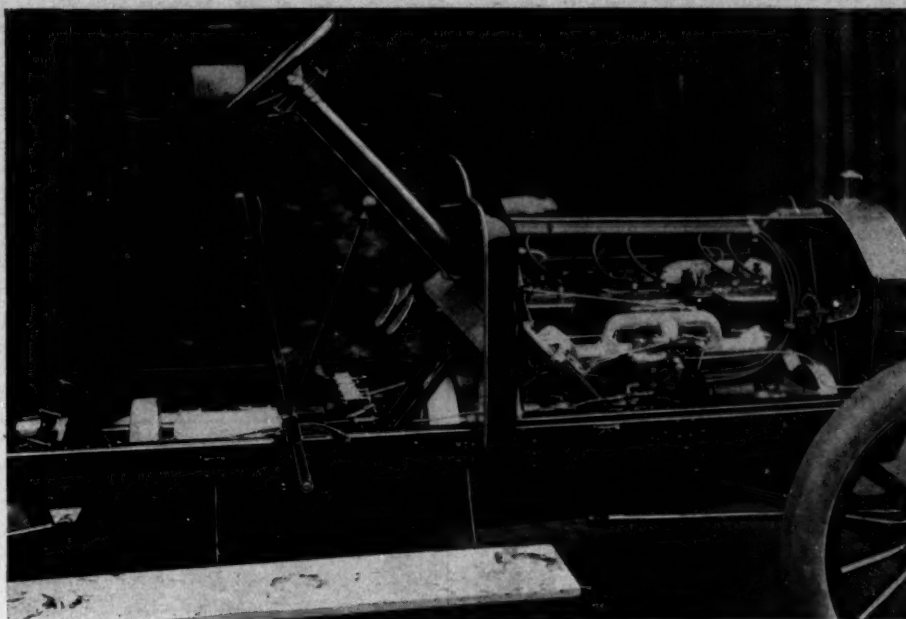


STODDARD-DAYTON "SIX" CHASSIS

So far only one of the two paths by which water may reach the generator has been considered. The other path is by way of the thermostat. In previous models of the White this device controlled the fuel supply. In the present system the thermostat controls what might be termed the auxiliary water supply. It has been noted that the flow regulator will permit not more than a fixed amount of water to pass through it. This amount of water is less than what the burner is capable of turning into steam of the desired temperature and pressure. When the only water going to the generator is that which passes through the flow regulator the temperature of the steam soon tends to exceed the normal, because of the excess burner capacity just noted. As soon as the temperature exceeds the normal the thermostat acts and permits an additional supply of water to pass through it into the generator, thus balancing the fuel supply. If there is a tendency for the water to overbalance the fuel supply the result is a lowering of the temperature of the steam and thereupon the thermostat again acts, shutting off the auxiliary water supply and the only water which then enters the generator is that which goes through the flow regulator. These actions and interactions take place within an extremely limited range of temperature, and, together with the action of the water regulator, the result is that the steam is kept at practically constant pressure with a uniform degree of superheat.



WHITE WATER FLOW REGULATOR



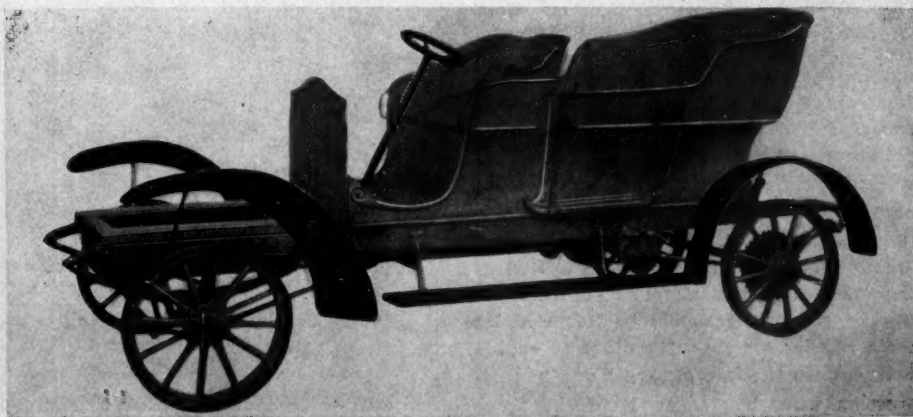
STODDARD-DAYTON "SIX," DESCRIBED LAST WEEK

Not considered as yet is the case where the thermostat opens at a time when the water supplied by the pumps does not exceed the capacity of the flow regulator. Obviously, the opening of the second path, that by way of the thermostat, does not alter the amount of water supplied to the generator. What does happen is that a smaller amount goes through the flow regulator, with the result that the gasoline supply is reduced, thus quickly restoring the balance between water and fuel.

BORBEIN BODY DESIGN

Coming from the factory of the Borbein Auto Co., 2109-11 North Ninth street, St. Louis, Mo., the new President side entrance body with detachable rear seat is a welcome entrant in that a body of this style is very popular with many car owners, that class desiring a tonneau car or one suitable for runabout work. This body is built up of ash and poplar lumber, glued and screwed together, and is given one coat of lead paint. Doors have polished brass hinges and handles, and seats have large round corners. The detachable seat has a bottom in it so the paint on the rear part of the main body is not marred when

the rear seat is in use. The bottom and a cross piece at the front end serve to stiffen the construction and prevent spreading. The rear seat is made large and roomy, and if desired there can be placed small folding seats in the front part, giving the seating capacity in the rear part for five passengers. The length at bottom is 92 inches and width 36 inches. The body is furnished with or without upholstery, also the front part of the body can be used for runabout without the rear seat if desired. The Borbein No. 26 large touring car in the white, ready for power, has a pressed steel frame 35½ inches wide in the middle and rear, front axle 1½ inches to the side square cross section with 5-inch drop, 114-inch wheelbase and standard tread. Half elliptic springs in front are 40 inches long and 44 inches in rear, both seats 1¾-inch wide and made with six leaves. Wheel steering is fitted and roller bearings carry the four wheels, the design being for side chain drive. The body has 20-inch tonneau doors, individual front seats, rear seat 60 inches wide and upholstered in hand buffed leather. These cars are built for shaft drive if desired, the necessary changes being standard.



BORBEIN CAR IN WHITE, ALL READY FOR MACHINERY



MOTOR CAR SHOP KINKS

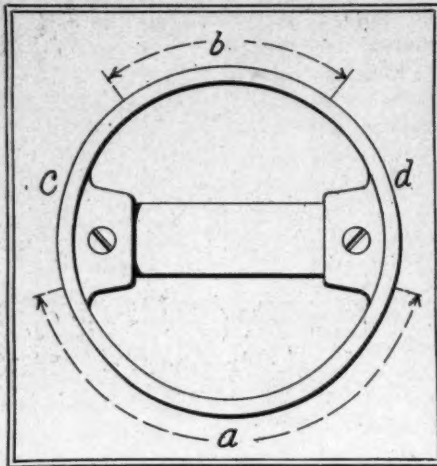


Finishing a Gas Engine Piston

A gas engine piston ought to fit its cylinder as closely as possible without binding when heated. Owing to the fact that the cylinder walls are cooled by circulation of water or air they will rise in temperature less than the piston, and especially the piston head. As the latter loses its heat only by conduction to the sides of the piston and through them to the walls, and to a less degree by convection on its inner surface, it follows that the piston head must be materially smaller in diameter than the bore of the cylinder. A good rule is that to make the piston .001 inch smaller than the cylinder bore for each inch of its diameter, or, for example, .004 inch for a 4-inch bore. In larger sizes the allowance may be a little less. The piston head should be about .003 inch per inch of diameter smaller than the bore, and should be finished either tapering or parallel to the first or second ring, the latter being easier. This practically means that the upper end of the piston will not make contact with the cylinder wall at all.

The pistons of an engine designed to have the highest possible efficiency should be relieved on their sides where they do no work. The force of the explosion causes the piston to be thrust sidewise against one wall of the cylinder when the connecting rod is at an angle. The direction of thrust is that of the arrow *a* in figure 2, and the relation of this lateral thrust to the total pressure on the piston may be determined by the diagram in the corner, in which *b* represents by its direction and length the pressure of the explosion—in pounds per square inch multiplied by the piston head area—and the line *c* has the same direction as the connecting rod at that instant. The horizontal line *d* will then represent the lateral thrust of the piston, and the length of *c* will represent the amount of the thrust sustained by the connecting rod. The double ended arrow *e* indicates the thrust due to the explosion, and the third arrow shows the direction of rotation of the crank.

As the pistons of all high speed gas engines are so thin that they are in reality nothing but springs and are able to conform themselves approximately to the curvature of the cylinder walls under pressure, it follows that nearly the entire working side of the piston should be left untouched. This will be approximately the arc indicated by the double ended arrow *a* in figure 1, which is a sketch of the open end of a piston. The opposite side of the piston should be left circular for a smaller arc than the other to enable it to sustain the lateral thrust due to compression when the crank is in the other edge of its circle. The space *c d* between



FINISHING A PISTON—FIGURE 1

the arrows *a* and *b* should be slightly relieved by filing. This will permit the spaces to hold oil, which may be distributed to the working surfaces by a couple of oil grooves, one just below the rings and the other near the open end. It will also avoid unnecessary friction.

Almost any piston, no matter how carefully finished, will show high spots after it has been run in the cylinder on its own power for a short time. If the car is to be tuned up to its highest efficiency it will pay to take out the piston and relieve

these spots with a fine file. This will in fact be very necessary if the piston is to be fitted as closely as possible to the cylinder, since it will otherwise be liable to bind. It should drop through the cylinder from end to end without sticking when cold. If the wrist pin is held in place by set screws—a very objectionable practice on account of the tendency of the set screws to sink in the steel and to break off at their points—it will probably be found that when the set screws are tightened the piston is sprung slightly out of shape, and this will be an additional reason for relieving the high spots after running for a while.

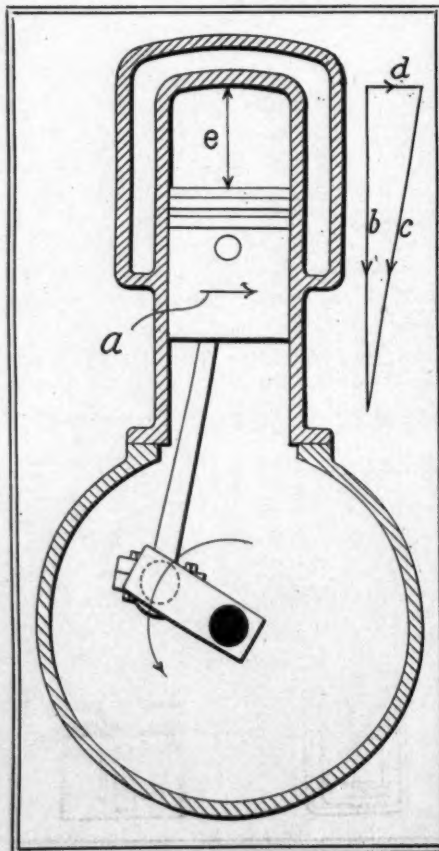
It will of course be understood that the piston is made gas tight wholly by its rings, but there is no trouble on this point if the rings are properly made and fitted. If there is a tendency for too much oil to work past the piston a bottom ring may be fitted to scrape the oil back. The bottom edges of the piston should not be rounded but left sharp to assist in the oil scraping action.

A parallel wrist pin may be trued by grinding after it has worn slightly flat, provided the ends be vertically split, and the pin be held by tapering set screws in the bosses of the piston. After the pin has been trued the screws may be set up to spread the ends slightly and make them fill their holes.

Any piece of hardened steel—whether tool steel or case hardened—must be annealed before it is bent, and any steel piece must be bent slowly to give the molecules time to adjust themselves. If the piece is of mild steel and has been bent and straightened cold, it should be annealed to relieve it of strains or soaked for some hours in boiling oil. It is better, however, to bend the piece at a low red heat if possible. Steel castings cannot be treated in oil to advantage.

Fitting Priming Cups

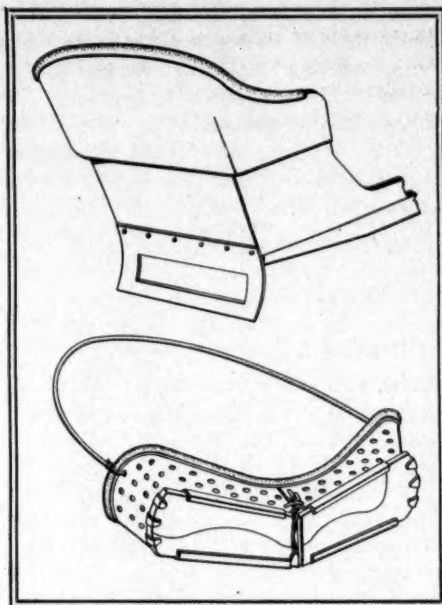
It is not infrequent that priming cups are so fitted that when gasoline is intended to reach a point near the inlet valves though this means it does not do so. This is because the cups are so placed in the intake pipes that the gasoline drops into the main pipe and the vapor has to be raised its entire length. A cup ought to be placed near enough the cylinder or the valve cages so the gasoline will remain in the pipe until the suction stroke takes it into the cylinder. If the cup is so fitted that the gasoline has direct access to the valve the motor ought to start on the second quarter turn of the crankshaft, whereas if fitted otherwise the operator may be worn out cranking the motor before it will produce any results.



FINISHING A PISTON—FIGURE 2



CURRENT MOTOR CAR PATENTS



DUST DEFLECTOR

BLACK'S GOGGLE

Bevel Transmission—No. 843,205, February 5; to A. V. Hart, Rochester, N. Y.—This transmission gives direct drive on all forward speeds. On the differential or the back axle are three bevel gears arranged concentrically and of different diameters. In the transmission case in front of the axle is a series of three shafts, each fitted with a bevel pinion. These bevel pinions are adapted to mesh with the three bevels on the differential. The shafts carrying these bevel pinions are arranged so they can be swung laterally into mesh with the differential bevels, the connection with the several shafts and the driveshaft from the motor being such as to permit of this.

Ventilated Goggles—No. 843,065, February 5; to T. W. Black, Burnham, Pa.—The framework containing the glass in these goggles consists of a pair of perforated sheet metal portions, one adapted for holding the glass for each eye. These sheet metal parts are hinged together at the centers over the bridge of the nose and overlap so as to allow the goggle fitting perfectly over the face. The glass of each is a large rectangular piece which slides into position and is held there by end clamps. The goggle is secured to the head in the usual style with an elastic band.

Dust Deflector—No. 843,072, February 5; to D. C. Collier, San Diego, Cal.—This dust deflector is a sheet metal blade or bent rectangle carried beneath the rear of the body and curves backward. The idea is that the dust rising from the wheels strikes this deflector and is by it directed toward the ground. Between the base of the deflector and the lowest part of the body is an open space which is adapted to let the current of air passing immediately beneath

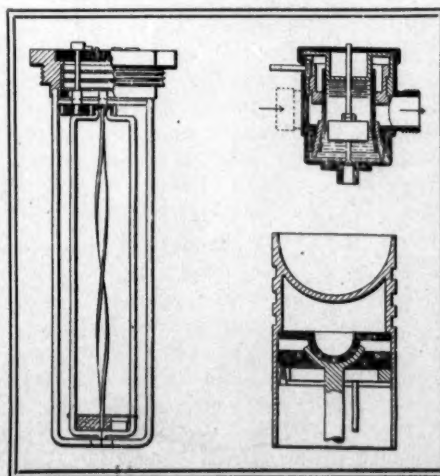
the body floor out without its being directed toward the ground and causing increased dust raising.

Tank Indicator—No. 843,166, February 5; to W. M. McNutt, New York, N. Y.—Extending from the top to the bottom of the gasoline tank is a spiral metal strap. On the top of this metal strap is a small spur wheel in mesh with a larger spur wheel and on the shaft of this larger spur is a pointer hand which moves over the face of the dial on the top of the tank. Fitting on the spiral strap is a cork float carried in a framework consisting of a pair of upright rods at opposite sides of the metal spiral strap. As the gasoline is poured in the tank the float rises and being prohibited from revolving by the two rods it causes the spiral strap to revolve, thus moving the registering pointer on the dial and so showing the depth of fuel in the tank.

Spring-Driven Fan—No. 843,380, February 5; to A. Winton and H. B. Anderson, Cleveland, O.—At the forward end of the motor is a standard air cooling fan with its shaft driven by spur gears from the crankshaft. To relieve the fan from sudden jerks when the motor is starting and stopping a spring drive device is used on the fan shaft for attaching the fan to the shaft. The fan is loose on the shaft and has a friction disk fastened on the fan-sheet at the forward side. Co-acting with the fan hub for driving the fan the former is brought into action by a spring surrounding the fan shaft. One end of the spring rests against the fan hub and the other is held against the shoulder on the fanshaft. With sudden startings this spring allows of sufficient slip to prevent the fan blades being broken or otherwise injured when in motion.

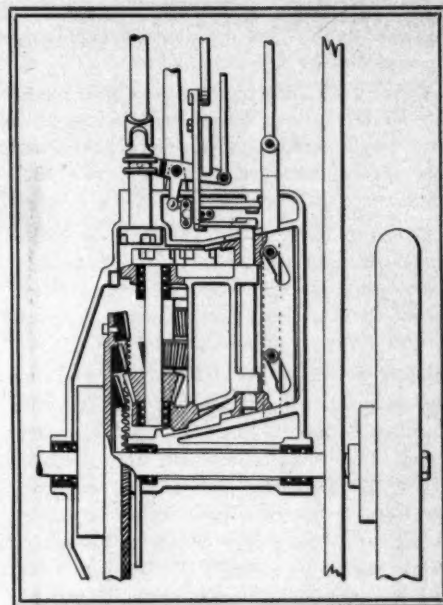
Connecting Rod—No. 843,004, February 5; to H. Dock, Wyncote, Pa.—The upper

MUELLER'S CONCENTRIC CARBURETER



TANK INDICATOR

CONNECTING ROD



HART'S BEVEL GEARSET

end of the connecting rod is a cupped or semi-spherical shape with the open portion upwards. Carried in the piston is a semi-spherical central part adapted to fit into the upper end of the connecting rod. The upper end of the connecting rod is held in contact with this by a ring piece secured to the sides of the piston. Holding this latter in place is a retaining ring threaded into the inner side of the piston.

Concentric Carbureter—No. 843,028, February 5; to E. L. Mueller, Paris, France—In the base of this carbureter is a circular gasoline chamber with its side walls converging toward the top in cone fashion. Directly above this chamber is the mixing box with air inlet in the rear and exit to the motor at the right. Located centrally between the mixing box and the top of the gasoline compartment is a cylindrical float for regulating the entrance of gasoline. Surrounding this float is a cylindrical lining with its lower end coned correspondingly with that of the gasoline box. Between this lining and the sides of the gasoline box is a wick. Gasoline rises in this wick and is absorbed from the top of the wick by the inrushing currents of air.

Bearing End for Springs—No. 843,306, February 5; to T. A. Shea, Hammond, Ind.—This patent refers to a bearing end for semi-elliptic springs and consists of the upper leaf of the spring curved at each end into semi-oval form. The second leaf is made of length equal to this and between it and the semi-oval part of the top leaf is inserted a filler block having its ends enlarged to prevent displacement by lateral movement of the body of the car to which it may be attached.



AMONG THE MAKERS AND DEALERS



Has Grout in Pittsburg—The Central Automobile Co. has secured the Pittsburg agency for the Grout.

Using Cork Inserts—The National Brake and Clutch Co., of Boston, announces that twenty-six manufacturers have taken out licenses to use cork inserts in the 1907 product.

Opens in New York—The General Automobile Supply Co., with J. C. Nichols in charge, has opened at Broadway and Fifty-second street, New York, handling a full line of accessories and parts.

Kiser Gets New Site—The Winton Motor Carriage Co. has awarded a contract for building its new fireproof garage in Beatty street, East End, which will cost \$30,000. The site was leased for a long term of years and is only a square from the center of the row. Work will be started at once, as Manager Earl Kiser is tired of the cramped quarters he has had to occupy since the old Winton garage was burned.

Grows in Grand Rapids—The new garage of the Luce-Banks Automobile Co. at 87 North Division street, Grand Rapids, Mich., practically is completed. The company will have 8,000 square feet of floor space, half of which will be used as a show room on the ground floor, the upper floor to contain the repair shop and storage. A small section of the first floor will be used for a display of sundries and an office for the company.

Theatrical Men Try It—Two Philadelphia theatrical men—Frank G. Zimmerman and Thomas F. Kelly—the former manager of the Chestnut street theater and the latter connected with the National theater, have broken into the game as a side line. Under the name of the Zim-Kel Motor Car Co. they have formed a company with a capital of \$25,000 to exploit the Pungs-Finch car in the quaker city. Headquarters have been secured at 320 North Broad street, and after necessary alterations salesrooms and offices will be opened there about the end of the present week.

Garage Floor Pan—The Hayes Mfg. Co., of Detroit, is placing on the market a garage floor pan to be used under motor cars in private or public garages. The pan is made of galvanized iron and enameled black—regular size 30 inches by 94 inches. They are fitted with casters and stiffened with 1/2-inch angle iron strips riveted on the bottom, making them light and strong. The casters allow it to be moved about under the car or elsewhere very easily, and is most desirable especially when running a car in or out, because in case the pan is hit by the wheels, it readily moves away, preventing the wheel running over and damaging it. The casters also are a convenience in cleaning the pan,



AUTOCAR'S QUAKER BRANCH

as it can easily be pushed to the place desired without the necessity of lifting or carrying it, preventing its contents being spilled on the floor.

Kingston Out, Hill In—R. L. Kingston has just relinquished his connection with the Harburg Tire Co. Frank G. Hill is the new sales manager.

Texas Garage Sold—H. H. Derrough has sold his interest in the garage at Fort Worth, Tex., to the Abbott Automobile Co. and there will be a change in the name as well as the ownership. Mr. Derrough will remain with the new concern for some time, it is announced.

Talks Another Parts Show—A. M. Andrews, who promoted the parts show in Chicago last year, announces that next week the National Association of Automobile Parts Manufacturers will be organized and that it will promote a parts show in the First regiment armory, Chicago, the week of September 21-28. It is claimed by Mr. Andrews that he has the support of many of the parts people who showed in the Miles exhibition last week and that he will have support.

Witherbee Officers—At the annual meeting of the stockholders of the Witherbee Igniter Co. the following directors were elected: William Barret Ridgely, Washington, D. C.; Albert A. Blow, New York; Edward Ridgely, New York; Allmand B. Elliott, New York; David F. Plahn, Hoboken, N. J. On the following day the directors held their annual meeting and elected the following officers for the ensuing year: William Barret Ridgely, president; Allmand B. Elliott, vice-president and electrical engineer; Alfred S. Watson, secretary and treasurer; Albert J. Fisk, general manager. Thomas S. Witherbee, the former president of the company, is no longer connected with it in any way. The company will continue under its pres-

ent name, the Witherbee Igniter Co., the manufacture of Witherbee batteries and other accessories in the ignition and lighting line.

C. W. Kelsey Resigns—The resignation of C. W. Kelsey, sales manager of the Maxwell-Briscoe Motor Co., is announced to take effect March 1.

Wings Move—Wing Brothers, proprietors of the American Automobile Co., of Tacoma, Wash., have moved into their new concrete garage at 204-9 St. Helens avenue. The building is modern in every respect.

Brooklyn Dealers Organizing—The Long Island Motor Trade Association is in process of formation, the leaders in the movement being B. D. Underhill, A. G. Southworth, Charles Carlson, D. D. Martin and E. P. Hicks. It is suggested that the new body hold a show in Claremont rink, Brooklyn, some time in March.

Buys in the Plant—The entire property of the Iroquois Motor Car Co., of Seneca Falls, N. Y., was bid in by Attorney J. N. Hammond, in behalf of E. R. Redhead, president of the Fulton National Bank, of Fulton, N. Y., who was the principal bondholder. The bid was \$16,212, which just covers Mr. Redhead's claim for principal and interest. After the sale, John S. Leggett, manager of the company, stated that a new company would be formed at once with Mr. Redhead having financial control. The Iroquois company was formerly located in Syracuse.

Improved Knox Plant—The Knox Automobile Co. during the past fall has practically doubled its facilities. The last addition, a four-story and basement building nearly 200 feet long by 75 in width, is now almost completely filled and installed with new machinery. The factory is now capable of turning out four complete four-cylinder cars and one commercial car each working day. The new foundry is fireproof. The walls and roof are constructed wholly of steel and reinforced concrete, even the sashes being of iron. This building is used only for casting the lighter metals—aluminum, bronze, etc.

Big Change in Detroit—The most important change of several years in the Detroit retail trade is embraced in the announcement of the merging of the forces of W. H. V. Newman and Harry H. Greece. Mr. Newman is one of the leading distributors in the city, his line embracing the Welch, Soules, Wayne, Waverley and Baker. Mr. Greece has been for the past year the state agent of the White. The combined lines will be handled in the future by the W. H. V. Newman Co. and it is expected that the present location of the White garage will house the firm, although this has not yet been decided. The change marks the

passing from Michigan of the state branch of the White, Mr. Grece having secured the consent of the factory authorities to his plan of handling the business of the White for Michigan in the new firm.

Will Open New Garage—Dr. O. C. Stutz and William Olpp, owners of the Upper Sandusky Motor plant, of Upper Sandusky, O., will open a new garage in the old Union building on South Sandusky avenue.

Quits the Tire Business—A. S. LeVino, who has been sales manager of the Ajax-Grieb Rubber Co., announces his resignation from the forces of the company to take effect February 15. Mr. LeVino will shortly be allied with a large motor car concern.

Autocar Branch Open—The Autocar Co., of Ardmore, Pa., has taken possession of its new branch at 249-251 North Broad street, Philadelphia, where it occupies three floors, each 51 by 200 feet. It also operates its own repair shop in the building just opened.

Hartford's Big Place—It is asserted by the people of Hartford, Conn., that the building of the Miner Garage Co. is the largest motoring establishment between New York and Boston. It is one block from the union depot in Hartford and is a magnificent appearing structure, with exit and entrance separate and with offices on the corner.

One of Baltimore's Finest—The Mount Royal garage of the Motor Car Co., of Baltimore, Md., is described as one of the finest in Orioletown. The company is agent for the Peerless, Thomas, Knox, Columbia, Buick, Stevens-Duryea and Baker electric. It occupies a large building, with a central entrance, and an office and parts store on one side.

Webb Jay Resigns—Webb Jay, manager of the Chicago White branch since its opening, resigned his position immediately after the close of the Chicago show. While his future plans are not definitely outlined, it is said he will become manager of a big manufacturing concern which is contemplating making steam cars. The retirement of Mr. Jay advanced Charles E. Denzer, who now is in charge of the retail end of

the White branch, with W. J. Urquhart looking after the wholesale business. The territory will continue under the supervision of C. A. Hawkins, who will divide his time between San Francisco and Chicago.

Changes Name of Oils—Announcement is made of a change in name of the Keystone motor oils which will now bear the Primus label, owing to the fact that the makers were unable to have the Keystone name registered.

Made by Coppock—While the Ward Fence Co. is financially interested in the Coppock Motor Car Co., of Marion, Ind., it is announced that the Coppock car is built by the Coppock Motor Car Co. and not the Ward Fence Co., as originally stated in Motor Age.

Fire a Slight One—The Hartford Automobile Parts Co.'s factory was slightly damaged by fire on the evening of January 23. The fire was confined entirely to the company's office and assembling room. The manufacture of Hartford universal joints was not interrupted to any extent and the departments in which the fire occurred were running at full capacity within 3 days.

Debut of Kermath Speedway—The Kermath Motor Car Co., of Detroit, is the latest concern to enter the runabout field. The car is a light high-powered runabout and is known as the Kermath Speedway. It was exhibited for the first time at the Detroit show. Among the features are the radiator design, the location of the time gears and commutator and the method of hanging the engine and transmission.

Northern Plant Ready—The Port Huron plant of the Northern Motor Car Co., which is known as the Northern Automobile Co., is now ready for business, having been completed by A. J. Smith & Sons, local contractors, in 60 days less time than the contract called for. With the addition of the plant at which from seventy to 100 hands will be employed at the start and more later, the company can turn out 400 of its two-cylinder 20-horsepower touring cars during the season of 1907. The new plant, which contains 50,000 feet of floor space and which cost \$40,000, is made en-

tirely of brick and is two stories in height. Both floors will have plenty of light, there being 24-inch piers every 18 feet, the balance being devoted to windows. In addition to the main building the erection of a large warehouse will be begun at once.

Big Banker Garage—The Banker Brothers Co., of Pittsburg, has rented for 3 years the building at 335-337 Diamond street near Wood street, in the heart of the business district, and will fit up the place for its downtown garage which has become one of the fixtures in the motor line-up of Pittsburg.

H. H. Fate Is President—The Commercial Motor Truck Co., of Plymouth, O., at its annual meeting, elected the following officers for the ensuing year: President, H. H. Fate, who succeeded Charles A. Keller; vice-president, H. S. Fate, who succeeded H. H. Fate; treasurer, George B. Drennen, who succeeded D. F. Irwin; secretary, Jacob Wallace, who succeeded Roy H. S. Spencer; manager, D. F. Irwin; mechanical engineer and superintendent of factories, Fred C. Avery.

Mitchell Progress—The Mitchell Motor Car Co. is in receipt of a cablegram from its Paris agent, C. N. Sauerbach, asking for delivery of sixty more additional cars this year. The Mitchell company states that on September 1 last it had orders for 1,168 cars out of the 1,200 it is making for this year. It says it already has orders for more than 800 cars of its 1908 output. Just as soon as the frost is out of the ground the company will commence further additions to its plant so as to enable it to increase its output to 2,500 cars.

Bankrupt's Stock Sold—The property of the R. M. Cornwall Co., of Syracuse, which recently went into bankruptcy, was sold to the Sterling Electric Co., of Dayton, O., for \$2,700. The Cornwall company formerly conducted a motor car business and later went into the manufacture of gasoline engines, at the same time running an electric specialty business. The unsecured claims against the company amount to \$15,708.69 and the total claims amount to \$21,738.26. The assets are made up of the property sold the Ohio company and \$3,000 in bills.



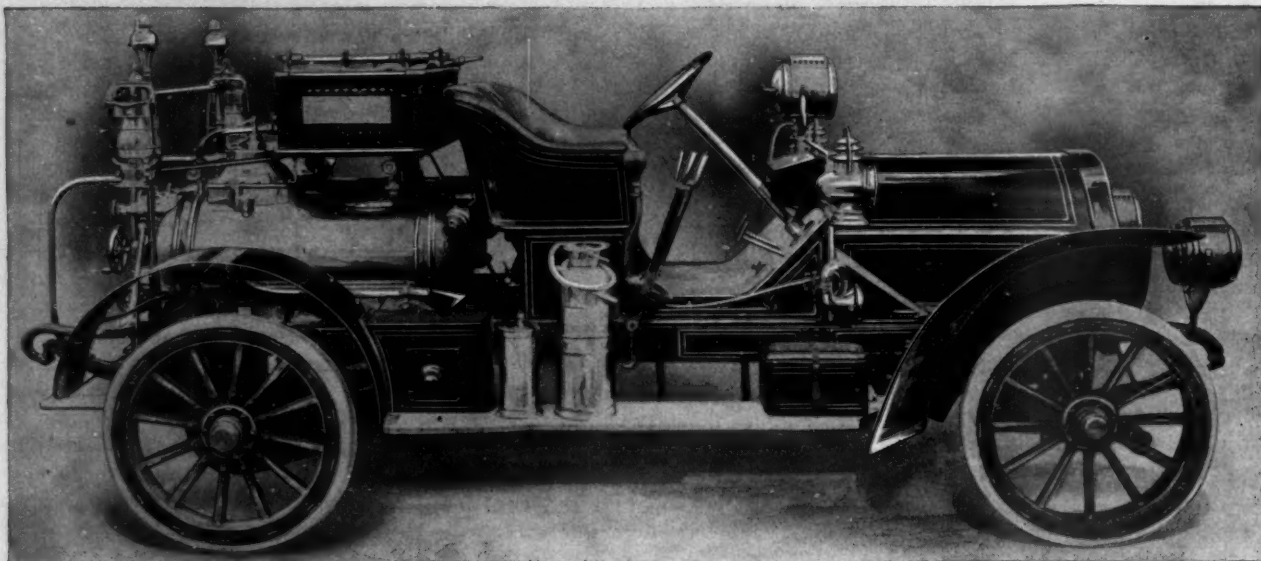
MINER GARAGE CO.'S GARAGE IN HARTFORD



MOUNT ROYAL GARAGE IN BALTIMORE



THE REALM OF THE



WITH A SPEED OF 40 MILES PER HOUR IT BEATS HORSE WAGONS TO EVERY FIRE

20F UNUSUAL attraction at the Madison Square garden show, New York, and the Coliseum exhibition, Chicago, at the exhibit of the Knox Automobile Company, Springfield, Mass., was the chemical fire wagon manufactured for first aid work in fire departments. The car chassis is the standard 40-horsepower Knox with vertical cylinder motor in front and drive through an enclosed cone clutch, selective transmission and side chains. The car is geared up to 40 miles an hour and is equipped with solid rubber tires. In every particular it is a typical fire-fighting machine with its brilliant red coloring and highly polished brass trimmings and fixtures. In the rear of the seat are two 35-gallon chemical tanks and in a rectangular screen box above these are 200 feet of 1 1/4-inch hose. The chemical system used is known as the Holloway and is such that when one tank is exhausted it can be replenished while the other one is being used, the machine carrying sufficient recharging material with it to accomplish this. In 10 seconds from the dumping of the acid jar by reversing the lever on the dome a pressure of 180 pounds to the square inch is generated. The wagon as illustrated on this page is not solely constructed by the Knox people; instead they turn over their chassis to the chemical company which completes the work. One of these wagons, as illustrated, was sold last fall to the Springfield, Mass., fire department which considered the installing of the motor chemical wagon preferable to adding horse wagons and building more stations. The wisdom of this selection was well emphasized in the recent million-dollar fire in Springfield, at which time the chemical motor wagon was in constant

commission, performing work of greater moment than that done by two or three horse wagons and continuing in service day and night. Since the installation of the motor wagon over sixty calls have been responded to and not once has any hitch occurred in the motor machinery or has the motor failed to respond to the first turn of the starting crank. This exceptional motor regularity is explained by the fact that every few minutes throughout the day and night the motor is cranked to see that it starts properly. In order to avoid any possible exigency in which the regular driver might be unable to attend a fire the chief has insisted on every member of the department learning to handle the motor, and now, since this is accomplished, the wagon is more a part of the general fire system than were the horses. Not once has a horse chemical wagon reached a fire ahead of the motor. On one occasion the motor made a run of a mile

IN A VARIETY

more than the horse wagon and reached the fire first by several seconds. The speed possible depends largely on the nature of the streets, but on good straight thoroughfares speeds of slightly over 40 miles an hour have been made and traveling at over 30 miles an hour is a common performance. Besides accommodating the chemical tanks of large size, two smaller tanks are carried on the running boards. Conveniently hung around the machines are axes, lanterns and firemen's clothing.

NEW FRANKLIN DELIVERY CAR

The H. H. Franklin Mfg. Co., Syracuse, N. Y., has just completed a new light delivery car to be called model L. The company has heretofore produced but one model of the commercial car. Model L, the new vehicle, is intended for light de-



FRANKLIN LIGHT DELIVERY CAR FOR FAST SERVICE

COMMERCIAL CAR



EVERY HOUR OF THE DAY THIS BUS TRAVELED WITH CLOCK-LIKE REGULARITY

OF SERVICES

livery, being hung low and geared for fast work over all kinds of roads. The carrying capacity is 1,000 pounds and the weight is 1,700 pounds. It has a speed of 25 miles an hour, which makes it capable of doing light delivery work with ease and dispatch. The car in construction is a typical Franklin having a 12-horsepower air-cooled motor placed ahead of the dash, wood sills, full elliptic springs, self-finding gear shift and many of the features shown on the Franklin pleasure vehicles.

A TRIO OF MOTOR VEHICLE USERS

At last one of the Pacific coast towns has fallen in line! No longer do all of the morning papers depend upon Dobbin to transport their early editions to the several outlying parts of the city and suburban towns! No longer do impatient

citizens lose patience at breakfast due to late delivery of the morning paper! This is owing to the Post-Intelligencer of Seattle, Wash., purchasing a 25-horsepower Knox air-cooled delivery wagon or light truck. The truck is of the "owl" fraternity, and starts out on its grind about 4 o'clock in the morning, delivering the Post-Intelligencer to shipping points along the water front, the interurban and union depots and street car terminals. The car is giving excellent service in every way and is no longer considered an experiment. The accompanying illustration was taken during the recent snow storm that swept over the Pacific northwest, which shows that this truck as well as other motor cars were not seriously affected by the unusual conditions.

During the week of the Madison Square garden motor car show in New York the White Co., maker of White steam cars, inaugurated a bus service from the Mad-

ison Square garden to its new salesrooms at Broadway and Sixty-second street. Every hour and always on the hour throughout show week the car made the round trip and so regular did the bus keep to its schedule that a traffic squad policeman on Broadway said he did not have to look at his watch for 3 days—he simply noted when the White bus went by. The bus is mounted on a regular stock chassis and has an extra large enclosed or limousine portion with double side windows and rear entrance door, the latter giving additional seating room on the sides of the enclosed compartment.

There has been some talk during the past week to the effect that a company will be formed for the purpose of establishing and operating a line of motor buses in Baltimore, Md. Just who the parties are at the head of the proposed enterprise has not become public and considerable secrecy is being maintained until certain details are decided upon. The various styles of motor cars have become more and more popular in Baltimore each month during the winter and especially since the show last month. That such a plan is on foot, therefore, is not at all surprising. The idea of the parties at the head of the scheme is to have the buses run on scheduled time between the various hotels and railroad stations, in the beginning. If this plan proves profitable it is likely that the promoters will establish lines between the various pleasure resorts and to the running and trotting race tracks during the seasons that the tracks are in operation. By the introduction of such a line of transportation Baltimoreans will be reminded to some extent of the time, years ago, when the lines of horse-drawn buses were in operation.



KNOX TRUCK FOR WESTERN NEWSPAPER DELIVERY



FROM THE FOUR WINDS



William Enthusiastic—After the Taunus race in June it is stated that Emperor William intends to be present at the final festivities of the Herkomer tour which take place in Frankfurt.

Targa Florio Entries—The Targa Florio in Sicily has already attracted entries from four nationalities, that is, the Italian Fiat and Itala, the De Dietrich, Gobron and Darracq French makes, the Benz, German, and Lucia, Swiss. Twenty-one cars in all are entered for this great classic.

More Alcohol Tests—Now that alcohol tests are becoming the rage in this country the dealers in the smaller towns are going in for this sort of thing. La Verne Cole, an agent at Rockford, Ill., bought 2 gallons of denatured alcohol for 65 cents and tested it. He came to the conclusion the fluid was no good, for, contrary to the Maxwell and Pierce experiments, he discovered the engine pounded and there was a noticeable falling off in speed. He also failed to do anything on the hills.

Paris Traffic Rules—A day's trial of the new rules concerning motor traffic in the Champs Elysees, Paris, convinced the authorities and the general public that it is proper to divide horse and motor traffic into distinct divisions. One change was found necessary. Whereas the rule first made the motor cars keep to the other edges of the avenue, that is, nearest the two sidewalks, the more practical arrangement was seen to be in the adoption of the central part of the road for the fast cars and the outer parts of the avenue for the horse-drawn traffic. The rule was accordingly changed. The new arrangement works satisfactorily for all parties.

Another Consolidation—The New York School of Automobile Engineers, which recently absorbed the Correspondence School of Automobile Engineering, announces that arrangements have been completed with E. Favary for the consolidation of the courses for drivers of his course in designing, construction and draughting. This course has been conducted at 1416 Broadway, but in view of the superior facilities possessed by the older institution at its building, 146 West Fifty-sixth street, New York city, the amalgamation will have most beneficial results. The consolidation will go into effect in February. Additions to the equipment since the first of the year include the purchase of a four-cylinder Locomobile and six four-cylinder engines, ranging from a 12-horsepower Special to a 35-horsepower Mercedes. These engines are being mounted on blocks for operation



SNOW NO FOE OF AEROCAR

under Prony brakes, and are used for practical work on wiring, magneto and igniter setting, carbureter adjusting, valve timing, lubrication, location of trouble, etc.

Used Firestone Tires—The Firestone Tire and Rubber Co. calls attention to the fact that the Reliance truck which made the trip from Detroit to Chicago was equipped with Firestone side wire tires, which, it is said, have already covered some 4,000 miles.

Helps Horses—During a recent snow storm in New York, when the horses were slipping and sliding on the icy streets, Harry H. Cobe took his 45-horsepower Jackson touring car and went to the rescue of the horses. He carried a sign, "The Humane Car," and wherever he found a team stalled he hooked on and pulled the vehicle out of its trouble.

Cleveland's Big Stable—Cleveland has bought another runabout for the municipal service. This last machine will be used by Park Engineer Stinchcomb, who during his regular course of duties covers 40 or 50 miles during the parks every week day in the year. On Sundays the car will be used by Joseph Goldsoll, chief of the park police, on his inspection routes. Cleveland now has ten cars in its municipal stable.

Kick on Toll Rates—The Automobile Club of Kansas City, to which was extended an invitation to assist in the dedication of the viaduct which connects the two Kansas Cities and spans the Kaw river, refused to participate in any parade because the rates on the viaduct, which charges toll, are too high. The club informed the officials of the project that it could give no parade, as to do so would be practically to sanction the use of the viaduct. The rates the motorists object to are 35 cents for runabouts, the same as for a four-horse team, and a higher toll for larger vehicles. This is the only toll proposition in Kansas City and vicinity, except one bridge across the

Missouri river, and motorists are preferring to thread their way among switchtracks in the bottoms until the rate is made reasonable for passage over the asphalted surface of the big bridge.

Promoting Mexican Line—C. B. Cox, who recently resigned as assistant general manager of the Pan-American railroad, is reported to be interested in a motor bus line to be run from Jalisco, Chiapas, to Tuxtla, Mexico, a distance of 175 kilometers. The line will cater to both freight and passenger traffic.

Georgia Shows Signs of Life—After a world of talk and years of inaction motorists of Atlanta, Ga., are actually going to have something—a hill-climb. It takes place February 22 on the Hapeville road. At this point there is a hill $\frac{7}{8}$ mile long, and all the way up the hill is perfect. Cups have been offered by Edward Inman, John E. Smith, the Southern Automobilist, Russell Hopkins and E. V. Haynes. Five classes will compete.

Plan a \$1 Show Night—The Cleveland Automobile Dealers Association has decided to have a special "dollar evening" during the local show next week. The plan of having a specially fine musical program and attracting the best class of people which has been successful at New York this year will be followed out. Other evenings during the week the price of admission to the show will be 50 cents, while during the afternoons the admission will be 25 cents. The decorations at Central armory will be more elaborate than at any previous local show. There are over sixty exhibitors.

Enforce the Law—The matter of the erection of proper signs at all crossroads is one that should have the attention of all motor clubs and users of motor vehicles. In many states this could be accomplished with little effort. An example of this is the experience of the Automobile Club of Pittsburg. The club considered the matter of erecting some signs on important roads but felt that it should really be handled by the county commissioners. A committee was sent to the county commissioners and called their attention to the fact that but few signs were to be found in Allegheny county and many of these were illegible from age. They were informed that the laws of Pennsylvania fully covered the subject and only needed enforcement. The court was appealed to and on the next return day the county constables were instructed to see that proper signs were erected by the township supervisors. Upon the following return day the constables

who had neglected the matter received a sharp lecture, and the next 3 months found signs in place at almost every cross-road in the county.

Want Americans In—Now that the Emperor's cup list has been fixed up without a single American car entering, the Italians hope there will be at least some American entries for the Brescia cup. Promises have been obtained for entries of nearly eighty cars for this event in September next and it is hoped that there will be enough foreign cars present to give an international character to the event.

Six Instead of Four Wheels—Charles T. Pratt, of Frankfort, N. Y., has been granted a patent on a car, the feature of which is the running gear which has six wheels instead of four. Two sets of rear wheels are placed close together and the transmission is by the rear set, leaving the other two sets steerable. The middle set is on a rocking truck which is supposed to remove much of the jar and make the riding of the car easy.

Hustle Counts—The meeting of the Ohio Automobile Association, which will be held during show week, will attract a large number of Ohio people to Cleveland for the show. Thanks to the efforts of the Cleveland Automobile Club, the state association is receiving strong impetus and clubs are being formed in a number of large cities. Youngstown is the latest center to fall in line with a local organization, the Youngstown Automobile Club having recently perfected its organization.

Herkomer Troubles Over—The Herkomer tour and the squabbles which it has raised this year are now definitely settled in the adoption of a circuit which differs from the tour as first proposed. The German Imperial Club and the Bavarian Club have agreed that the route passing through Nuremberg shall be abandoned, the reason being that the necessary work to be done on the roads would not be finished in time. Three other deviations from the circuit have been made. The finish will be Frankfort instead of Homberg. The road through Baden will again

be examined since it is considered rather unsafe in view of the large number of cars which will compete. It is one of the rules of the present year that if less than eighty cars are engaged the tour may be declared off. The date of the event is fixed for June 5, starting in Dresden and finishing on June 11 in Frankfort.

New German Tour—On the occasion of the international sports show in Berlin a reliability test will be held for runabouts, lasting 3 days—from May 6 to May 8. The West of Germany Club, whose headquarters are at Mannheim, has offered a \$5,000 cup for touring cars. The cup will be contested at the end of August over 600 miles between Frankfort and Mannheim. Like the Herkomer cup this new trophy will include a race on the level and a hill-climbing contest. The latter will probably be the Koenigstuhl near Heidelberg which has a height of nearly 2,000 feet overlooking the Neckar valley. Finally the tour will terminate in a battle of flowers at Mannheim. This tour will in all probability replace the Herkomer tour for 1908, since the latter is being run this year for the last time.

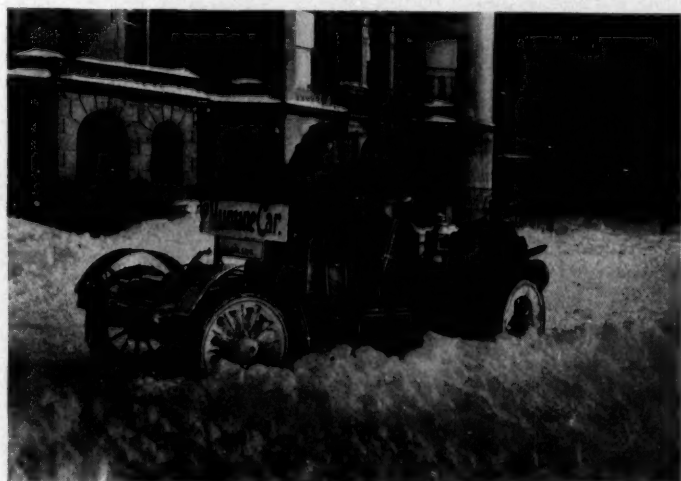
Snow No Foe—That the modern motor car need not fear snow and slush is demonstrated daily. Only recently Arthur M. Robbins, manager of the New York sales department of the Aerocar Co., took a party of newspaper men from Seventy-third street and Broadway to Woodmansten Inn over roads deep in snow and slush. The cars—there were two of them—experienced no difficulty and took the grades easily. Hiram Percy Maxim, chief engineer of the Electric Vehicle Co., Hartford, Conn., has just made an especially severe test of the Midgley tread, which the Hartford Rubber Works Co. has recently brought out to solve the side slip problem on its Dunlop and Clincher type tires. He drove a 24-horsepower Columbia touring car, carrying three people, up Church street hill, Hartford, a 22 per cent grade, 8 inches deep with snow, while the ground underneath was covered with ice from a recent thaw. This hill is so bad it is seldom used

by any form of vehicle, even in summer. Two 32 by 4-inch rear tires with the Midgley tread was the equipment, regular smooth tires being used in front. Not only was there no tendency to slip, but Mr. Maxim was able to stop in the middle of the hill and pick up again from a standstill, he declares.

Gets the Garden Decorations—Kansas City's motor car show, March 4 to 9, will be, in many respects, a reminder of the Madison Square garden display. All the decorations and fittings of the New York show were purchased by the Kansas Cityans and will be erected in Convention hall under the direction of Designer Ball. The decorative scheme will have to be slightly modified, however, as Convention hall is about one-third smaller than Madison Square garden.

Will Give Up Toll Road—The officers of the Fayetteville and Syracuse Railroad and Turnpike Co., which owned the toll road which is part of the main highway traveled by motorists going through New York state from east to west, have announced their willingness to confer with the board of supervisors of Onondaga county in regard to the proposition for abandoning the toll road. It is planned to make a state road of this highway, which would be welcome to motorists, who have been forced to pay large amounts of money in toll for many years.

Certainly a Good Test—R. H. Magoon, of the Magoon Motor Car Co., of Cleveland, last week made a night trip from Massillon to Cleveland in a blinding snow storm. He started from Massillon at 5 p. m. and, without stopping the motor, Akron was reached at 7:30. A stop of 1½ hours was made for supper and Cleveland was reached at 11 o'clock. The motor was not stopped the whole trip and no adjustments, repairs or re-filling of tanks were made. The trip of 80 miles was made in a deep snow and the roads were badly cut up, being practicably impassable for horse-drawn vehicles. This test only goes to show what has been contended by many—that the motor car is available in winter.



JACKSON IN THE SNOW



NEW YORK'S "HUMANE CAR"

HELPING A TEAMSTER



BRIEF BUSINESS ANNOUNCEMENTS



Philadelphia, Pa.—A charter has been applied for for the Girard Motor Car Co.

New York—The Lozier company has leased the third loft in the Pope building in this city.

St. Louis, Mo.—The Acme Automobile Co. has been incorporated with a capital stock of \$3,500.

Newark, N. J.—The Breeze Carburetor Co. has been incorporated with a capital stock of \$50,000 to manufacture motor car electrical devices.

Philadelphia, Pa.—Joseph L. Keir, the agent for the Renault and the Michelin tire, has opened his new salesrooms at 310 North Broad street.

Allegheny, Pa.—The new garage of the Allegheny Automobile Co. at 915-917 Irwin avenue will be ready for occupancy about March 1. The company is now located at 711 Jackson street.

Rochester, N. Y.—The Selden Motor Vehicle Co. has taken over the property in East Rochester which is held by George B. Selden, and building operations will be started in the spring.

Boston, Mass.—The Henshaw Motor Co., now located at 268 Columbus avenue, agent for the Columbus electric and the Haynes, will shortly remove into the new garage at Massachusetts avenue and Newberry street.

Providence, Pa.—E. S. Hayward, formerly manager of the Shepard company's garage, has been appointed sales manager of the motor car department of the Aetna Bottle and Stopper Co., agent for the Grout car. The company recently moved into a new garage at 54 Peck street.

New Britain, Conn.—The Wolverine Motor Works, which is completing its plant at the foot of Hollister avenue, will be ready to commence operations in about 7 weeks. As soon as that plant is completed the company will commence work on another building at an additional cost of \$10,000, it is estimated.

Newark, N. J.—A new company has been formed here to handle the Dorris, and will be known as the Dorris Co. of New Jersey. A. T. Pursell, formerly with J. E. Pye, local agent of the Ford company, will be the manager, and the office of the company will be located in the Union building.

Altoona, Pa.—A reorganization of the Altoona Motor Car Co. has been effected. The company as originally formed was composed of G. C. Eppelham, R. A. Rohrer and Harry Morgan, but recently Mr. Morgan withdrew. His place will be filled by Louis Plack, Jr. John I. Heltzell, formerly agent for the Reo, has been appoint-

ed manager and sales agent for the Altoona company.

Philadelphia, Pa.—The Wayne will be handled here by Fraser & Rittenhouse, of the Rittenhouse garage.

Toledo, O.—The White Co. will open a new garage here shortly. It will be reconstructed into a showroom.

Cleveland, O.—W. W. Partridge, formerly in the insurance business in Massachusetts, has formed a partnership with Henry Moore, the agent for the Stoddard-Dayton in this city.

Reading, Pa.—Application will shortly be made for a new concern to be known as the Berks Auto and Garage Co., which will do a general motor car and repair business.

Newark, N. J.—The Roselle Motor Co. is removing its repair shop to the second floor of its building on Orange street, and will lease the first floor as a salesroom as soon as it is redecorated.

Newark, N. J.—The Newark Motor Car Co. is now located on Fourteenth street, near Central avenue, and will do a general supply business, in addition to acting as agent for the Reo and Premier.

Columbus, O.—The Okey Motor Car Co., which was incorporated recently with a capital stock of \$25,000, has elected its officers as follows: President, C. M. Chittenden; general manager, A. G. Walton; secretary and treasurer, F. R. Shinn; engineer, P. Okey. The company will continue at its old stand at 7 Frank street, but

RECENT INCORPORATIONS

Syracuse, N. Y.—Woods Cushioned Wheel and Tire Co.; to manufacture a motor car wheel which has been invented by Blanche Walsh, the actress. Officers: F. D. Powell, president; E. D. Hotchkiss, treasurer; C. Ecker, vice-president and general superintendent; E. D. Woods, general manager.

Utica, N. Y.—Mott Wheel Works; capital stock, \$25,000; to engage in the manufacture of bicycles, whole or in parts, wagons, carriages, motor cars and other vehicles, agricultural implements and various other things. Incorporators: O. W. Mott, A. E. Swartwout and F. E. Doolittle.

Newark, N. J.—Raymond S. Joo Co.; capital stock, \$25,000; to manufacture motor cars. Incorporators: R. S. Joo, J. Koch.

Camden, N. J.—Zim-Kel Motor Car Co.; capital stock, \$25,000; to manufacture motor vehicles, etc. Incorporators: Y. F. Kelly, Cape May; F. C. Zimmerman, Philadelphia, and W. G. Houck, New York city.

Jersey City, N. J.—Schneider Mfg. Co.; capital stock, \$300,000; to manufacture motor cars. Incorporators: G. C. Murray, D. E. Wing, of 42 Broadway, New York city.

White Plains, N. Y.—White Plains and Rye Beach Automobile Transportation Co.; capital stock, \$15,000; to conduct a motor route. Incorporators: E. P. Horton, Z. Carpenter and L. S. Horton.

Cleveland, O.—Advance Automobile Co.; capital stock, \$10,000. Incorporators: E. E. Bartholomew, G. M. Kimmerdell and W. A. Greenland.

later on it is probable it will erect a larger plant in this city.

Norwalk, Conn.—F. E. Lockwood & Co. have secured the local agency for the Elmore, Orient and Autocar.

New York—The Rees Co. has been incorporated with a capital stock of \$120,000 to manufacture motor cars.

Evansville, Ind.—The Fellwock Automobile Mfg. Co. has been incorporated with a capital stock of \$20,000. The directors are P. B. Fellwock, W. E. Fellwock and J. F. Fellwock.

Trenton, N. J.—The Conover Motor Car Co., of 102 Railroad avenue, Paterson, has been incorporated with a capital stock of \$20,000, and will manufacture machinery, equipment, etc.

Detroit, Mich.—The National Spring and Wire Co., manufacturer of springs and buggy seats, is considering the advisability of establishing a branch plant in Canada, in order to avoid payment of the high duty exacted on its products. The company is running with a day and night force at the present time.

Philadelphia, Pa.—Charles F. Schroeder is enlarging and improving his garage at 2534 North Broad street. When the alterations are completed the establishment will be run under the name of the Hump motor garage, as formerly, and will act as a clearing house for the purchase, sale and exchange of second-hand motor cars.

Sacramento, Cal.—The Western Motor Car Co. has been incorporated with a capital stock of \$25,000, of which \$10,000 has already been subscribed, and will engage in a general wholesale and retail motor car business. The incorporators are C. H. Bulson, E. W. Crook and I. H. Bulson, of Sacramento, and W. D. and A. L. Ingram, of Lincoln.

Toledo, O.—The Union Supply Co., of 231-233 Superior street, has increased its capital stock to \$60,000, the increase being necessary to provide for working capital for the expanding company. In addition to the rubber goods and bicycle supplies which the company now carries it will handle motor car accessories. J. G. Swindeman is the president of the concern.

Saginaw, Mich.—There is considerable talk of the probability of the Ayres Gasoline Engine and Automobile Works removing from this city to Detroit. Detroit capital has recently been interested in the concern and the board of directors has been enlarged so as to give the newcomers representation on the directorate. The concern was originally organized to manufacture gasoline engines, but later on motor car fixtures and specialties were added to the company's original list.